

THE RESPONSIVENESS OF HIGH SCHOOL ACHIEVEMENT  
TO THE QUALITY OF SCHOOL LIFE FOR GRADE  
TEN STUDENTS IN NEWFOUNDLAND

CENTRE FOR NEWFOUNDLAND STUDIES

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MORLEY E. WHITT









THE RESPONSIVENESS OF  
HIGH SCHOOL ACHIEVEMENT TO THE  
QUALITY OF SCHOOL LIFE  
FOR  
GRADE TEN STUDENTS IN NEWFOUNDLAND

by



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A thesis submitted to the School of Graduate Studies  
in partial fulfillment of the requirements for the degree  
Master of Education

Faculty of Education  
Department of Educational Administration  
Memorial University of Newfoundland

June, 1989

St. John's

Newfoundland

## ABSTRACT

This study examines students' perceptions of the quality of their school lives and addresses four broad questions. First, are there differences between schools in terms of aggregate student rating of the Quality of School Life (QSL)? Secondly, how responsive is the students' perceptions of the Quality of School Life to the background variables Location, Sex, Age and level of Parents' Education? Thirdly, how responsive is high school achievement in mathematics and reading to students' perceptions of QSL? Finally, how responsive are students expressed satisfaction and dissatisfaction with school to their perceptions of QSL?

All data for this study was obtained from The Quality of School Life Project. Only information pertaining to the grade seven students was used. This data had been collected from eight schools located in urban and rural areas of the province. Students answered a questionnaire containing a revised Williams and Batten (1981) instrument, and completed a standardized achievement test in mathematics and reading. The instrument was designed to measure five domains of the quality of school life and student well-being (satisfaction and dissatisfaction). The parents also completed a questionnaire.

Principal component analysis was conducted to describe the psychometric properties of the instrument. The alpha

reliabilities, construct and concurrent validities of the measures were within acceptable ranges.

On the basis of the results, it was concluded that high school students' perceptions of the quality of school life can be accurately measured even though the measurement of QSL and its domains will undoubtedly be improved as an outcome of further research.

It was found that not one of the four background variables, Location, Sex, Age or Parents' Education contributed significantly to QSL. However, when controlling for these variables, the QSL effects on mathematics and reading performances were statistically significant. The domains of QSL with the greatest effect were status and opportunity.

The QSL variable also accounted for more than 40 percent of the variance in schooling satisfaction or student well being. The domains of QSL with the greatest effect were the Adventure and Teacher domains respectively.

It was found that females reported more satisfaction with school than did males. When controlling for QSL, large differences in mathematics and reading were found between the urban and rural students, with the clear advantages shown to be in favour of the urban students. The relationship between age and achievement was negative, indicating that older students were lower achievers. Achievement was positively related to the level of Parents' Education.

## ACKNOWLEDGEMENTS

The author wishes to thank the QSLP group of researchers consisting of Jeffrey Bulcock (principal investigator), Dr. J.R. Covert, Dr. W.J. Gushue, Dr. R. Magsino, and Dr. A. Singh. Their co-operation was vital to this study and is gratefully acknowledged.

Special appreciation is extended to Jeffrey Bulcock, who has been optimistic and encouraging in his role as thesis supervisor.

Special appreciation is also extended to my wife, Sharon and children, Christopher, Christiane, and Andrew whose love, patience and understanding has made this endeavor a worthwhile experience.

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## **CHAPTER 1**

### **THE PROBLEM**

#### **Introduction**

Educators generally agree that it is desirable for students to have a happy and satisfying school experience. Although, students are frequently asked whether or not they like school, schools do not usually focus much attention on the satisfaction or well-being of students or the quality of school life. Furthermore, until recently, there has been little research in this area. The present study will focus on the quality of school life as perceived by students, its components and its consequences.

#### **Background to the Problem**

In this province during the past decade, a number of reports have been completed focussing on the problems within the educational system, as a first step toward improving the quality of education. Some of these reports are discussed below.

#### The Report of the Task Force on Education

In their report Improving the Quality of Education: Challenge and Opportunity, Crocker and Riggs (1979, p. 121)

concluded that it is "...a mark of failure of the schools as it is failure of pupils, when half or more of all those who begin their schooling do not reach the end of the secondary school program". This study did not focus on the quality of school life as perceived by students. It concluded, however, that the problems related to student retention would be reduced by improving the quality of education. It recommended that the educational system develop a strong academic program with a broad curriculum core to improve the quality of education [p. 122].

#### Improving School Retention Report

One year later, in another report, Crocker and Riggs (1980, p. 54) recommended that "...school leaving age be increased by one year." Since students presently stay in school one year beyond the school leaving age, fifteen, increasing the age by one year would not increase the average age of the student population. They argued that this would send a signal that a greater level of educational attainment is expected. The new minimum school leaving age would be closer to that required for completion of the program. This in itself may convince more students remain in school.

### Public Attitudes toward Education

Warren (1983) surveyed taxpayers' general impressions of education and their satisfaction with the educational program. "There is a universal agreement that education is extremely important to one's future success" and a majority (57%) believed that the quality of education had improved over the past five years [p. 77].

When asked the best features of schools, the taxpayers identified good teachers (56%), good curriculum (21%), good facilities (14%) and good extra-curricular activities (5%) [p. 17]. The respondents wanted some curriculum changes, including high school programs dealing with sex education and drugs and alcohol education, special programs for the handicapped and the disadvantaged, and increased emphasis on preparing high school students for work [p. 78-80].

### Leaving Early Report

In 1982, the Department of Education, the Federation of School Boards, the Denominational Education Councils, the Newfoundland Teachers' Association, and Memorial University formed a joint committee to conduct a study called Leaving Early - A Study of Student Retention in Newfoundland and Labrador. Their findings concerning the variables underlying leaving early, and the reasons given by early leavers are of interest.

### Variables relating to leaving early

The committee studied the effects of age, sex, community size, and grade level at the time of leaving. It found that a higher percentage of males (57%) than females (43%) left school early. [p. 17] a finding consistent with studies carried out elsewhere, (Cepychynk, Pawlovich and Randbawa, 1983, Nova Scotia Department of Education, 1981, Watson, 1975, Anderson, 1982) and attributed to males' not having as positive a view of school as females' [p. 18].

The committee found that the size of a community is related to leaving early. "The highest percentage of early leavers is found in predominantly rural districts" [p. 7]. The committee also found that the majority of early leavers are more than one year older than the legal minimum school leaving age [p. 18].

### Reasons for leaving early

The reasons given for leaving early were independent of the community size. From the study "the single most predominant reason why students leave school prematurely can be found within the school environment" [p. 113]. School related reasons for leaving were identified as "academic failure", "didn't like teachers", "didn't like subjects", and "hated school".

"Academic failure" was given as a reason for leaving school almost twice as much as any other reason. This seems



to confirm the popular beliefs that "success breeds success" and "nothing fails like failure" [p. 39].

**"Didn't like the teacher"** was given as a reason for leaving more frequently in rural communities, in the lower grades, at younger age and by males. The teacher is an essential part of the education process and a good rapport between teacher and student is very important. Yet, research shows that problems with teachers and principals is often the most frequently cited reason for leaving school early. According to the report (p. 113):

There may never be any way found to accurately measure the degree to which the success or failure of a student is related to the quality of teaching, and the inter-personal relationships developed between students and teachers. But there is a wealth of evidence for the conclusion that one of the most important elements in the student's school life is the teacher.

**"Didn't like the subject"** as a reason for leaving was dependent on grade and age rather than on community size or sex. According to this report, "a number of studies have argued that school subjects must be perceived by young people to have some practical value if they are to 'like these subjects'" [p. 46].

**"Hated school"** was given more in smaller communities, in the junior high school grades and in the 15-17 year old age group [p. 46].

### The Royal Commission on Employment and Unemployment

The Royal Commission on Employment and Unemployment in its background paper Education for Self Reliance (1986, p. 113) stated that "the first priority of the new strategy in education must be to meet head-on the problems of illiteracy, poor school retention and poor basic quality of education."

One of the recommendations was:

To encourage students to stay in school, the overall quality of the total curriculum must be improved; a much greater emphasis must be placed on developing in young people strong fundamental academic abilities; and course content must be more challenging and relevant to the society, life-style, and communities in which young people live. [p. 114]

One of the outcomes of this report was to recognize that the educational needs of rural and urban students are different. It concluded that discrepancy between urban and rural literacy rates must be reduced.

For children from middle-class St. John's families, and from the middle-class families of industrial towns such as Grand Falls and Labrador City, the present school curriculum "makes sense". It accords with the kinds of lives their parents lead and, even when they feel disenchanted or bored, such children can be helped by their parents to get through difficult patches at school.

For poorer families, however, and particular for those living in small rural communities, there is little connection between what goes on in the classroom and what goes on at home or in the community. A few brighter children do well despite this and, rewarded by their teachers for their performances, finish high school.... For too many rural children, however, school is an alienating experience with little meaning in their lives. [pp. 115-116]

Not only did the Commission recognize the difference between urban and rural life styles, it recommended that the educational system prepare students to be productive, self-reliant and fully contributing members of their home communities. To help accomplish this, it was recommended (p. 117) that the curriculum be broadened as follows:

The Department of Education, in consultation with the Newfoundland Teachers' Association, should redesign the primary, elementary, and secondary school programs so that they provide instruction in, and give credit for, skills that contribute to greater self-reliance and successful adaptation to life in rural Newfoundland.

Although a revision and broadening of the curriculum was recommended, the Commission recognized that this may not be the panacea. It stated that there were other factors in schools which may have to be corrected before the retention rate is decreased.

### **Purpose of the Study**

This study focussed on the quality of school life (QSL) as perceived by students. The primary purpose was to describe the responsiveness of student achievement and well-being to student perception of the quality of school life. First, the dimensions of the quality of school life were measured; then their impact on achievement and well-being evaluated.

The purposes of this study were to provide answers to the following questions:

1. Are educational outcomes (Mathematics Achievement, Reading Comprehension, student Satisfaction and student Dissatisfaction) related to QSL?
2. Is QSL related to student Sex, Age, Socioeconomic status and Location?
3. Are educational outcomes related to QSL when the effects of Sex, Age, Socioeconomic status, and Location are removed?

### Definition of Terms

Several of the variables used in this research have meanings particular to quality of school life research. They are defined below. The first five are the domains of the Quality of Life, the next three deal with Well-being and its two dimensions (satisfaction and dissatisfaction), and the remaining two with the background variables.

#### Status

Status refers to an individual's perception of the relative degree of prestige accorded to him/her by others particularly by two groups of significant others - teachers and peers. A seven-item questionnaire was used to measure Status. This questionnaire was then subjected to principal component analysis, retaining as appropriate measures of this latent construct only those items with appropriate content and

factor loadings of greater than .50. The alpha reliability was calculated. The Status score, or level of Status, for each student was computed using the formula:

$$\text{Status} = FS_1x(St_1 - \bar{M}_1)/SD_1 \dots + FS_7x(St_7 - \bar{M}_7)/SD_7$$

where FS = factor score coefficient for the item

St = item score

$\bar{M}$  = mean for each item

SD = Standard Deviation for each item

This means that the total Status score of each respondent is the total of his/her standard scores on the seven items of the questionnaire.

### Identity

Identity is the individual's feelings of self-awareness, that is, the individual's response to the question "Who am I?" in relation to the school society. Identity was measured using an eleven-item questionnaire, which was subjected to a principal component analysis and computed in the same way as the status construct.

### Adventure

Adventure refers to the interest and self-motivation to learn. Where high levels of Adventure during learning is obtained, learning becomes an end in itself and is intrinsically rewarding. Adventure was measured using a ten-

item questionnaire which was factor analyzed and computed in the same way as the status construct.

### Opportunity

Opportunity refers to the relevance of schooling to a student's future. It is the belief that what is learned will be useful in the future (for employment or more intrinsic rewards). Opportunity was measured using a nine-item questionnaire which was factor analyzed and computed in the same way as the status construct.

### Teacher

Within the closed structure of the school society the teacher is a dominant force influencing most of the other factors in the quality of school life. The Teacher factor was measured using an eight-item questionnaire which was factor analyzed and computed in the same way as the status construct.

### SES

Socioeconomic status is an exogenous variable which was constructed from father's employment status, mother's employment status, father's education, mother's education, and total number of children in the family. This latent construct was factor analyzed and the level of SES computed in the same way as the status construct.

### Well-being

A person's sense of well-being consists of two dimensions, Satisfaction and Dissatisfaction.

### Satisfaction

For the purpose of this study, Satisfaction refers to how much a student likes school. Satisfaction was measured using a seven-item questionnaire. The questionnaire was factor analyzed and the level of satisfaction computed using the same method described for measuring status.

### Dissatisfaction

Dissatisfaction refers to how much a student dislikes schooling. Dissatisfaction was measured using a nine-item questionnaire, which was factor analyzed and computed in the same way as the status construct.

### Rural students

For this study a rural student is a student attending a school in which the majority of students are from a small town (under 2,500) or the majority of students are bussed in from small towns. Rural students in this study attended school in Flowers Cove, Fogo, Plum Point, Point Leamington, and St. Alban's.

### Urban students

Urban students are defined for this study as students attending a school in which the majority of students in attendance come from an urban centre (towns with a population exceeding 2,500). Urban students in this study attended school in Corner Brook and Gander.

### Respondents

For the purpose of this study respondents are defined as students from participating schools who returned a signed consent form from their parents and were retained in the study.

### **Assumptions**

The main assumptions of this investigation were the following:

1. Educators should be concerned with and seek ways to measure student Well-being.
2. The student's perception of the quality of school life is an acceptable measure.
3. The domains of the Quality of School Life interact with each other but are not hierarchically related.
4. The path analysis models are recursive.



### **Delimitations**

The main delimitations of this study were as follows:

1. All students were from within the province of Newfoundland and Labrador.
2. Information on mathematic skills and reading comprehension were obtained from one standardized test, the Canadian Test of Basic Skills.
3. The study deals only with grade ten students.
4. The sample was selected with approximately equal numbers of "rural" students and "urban" students.
5. Information on the students' perceptions of the quality of life in schools was obtained from a modified version of T. Williams' Quality of School Life Scale.

### **Limitations**

The following limitations are recognized as being inherent within the present study.

1. This study is limited in that the participants may have difficulty in responding to some of the personal questions. The possibility of selecting neutral answers rather than selecting radical answers is recognized.
2. Two of the schools originally selected for the study declined and were replaced by alternate schools from the same category.

3. This study is limited to the students from the participating schools who returned the parental consent forms and completed the questionnaires (62.9% of the grade ten students in those schools).

### **Significance of the Study**

Recent literature indicates that educators and the public in general are increasingly concerned with students' rights and the school environment. Because students spend a large portion their lives, 13 years, in school, society should insure that schools provide a positive and maturing experience for the students. It seems appropriate then, to survey students to obtain a clear picture of their perceptions of schools.

This study could have significance in the following respects:

1. It may contribute to administrators' knowledge of how students perceive schools and suggest ways to improve the quality of school life.

2. It may contribute to research by showing that quality of school life may be used as another social indicator for measuring the "effectiveness of schools".

## Organization of the Thesis

This introductory chapter has provided the background to the study. It summarized the purpose, stated some research questions, defined pertinent terms, and acknowledged the limits of the study.

Chapter II reviews the literature and presents the conceptual framework for the study. It reviews the research related to quality of life, to student satisfaction with schools, to Quality of School Life and its domains. The conceptual model indicates the variables expected to contribute to the Quality of School Life, as well as the expected effects of the Quality of School Life and its domains on student Achievement and Well-being. The chapter concludes by listing the hypotheses to be tested.

Chapter III presents the methodology used in the conduct of the research. It describes the sample, the instruments and the analyses to be used.

Chapter IV describes the measurement models used in the study. It reports the reliability and validity of the instruments.

Chapter V presents the findings relative to the questions posed in the study. It presents descriptive statistics for the variables used in the QSL model as well as the multiple regression and the results of the path analyses.

The final chapter of this thesis, Chapter VI, summarizes the findings of the study, draws conclusions and implications and offers some recommendations for further research.

## **CHAPTER 2**

### **REVIEW OF RELATED LITERATURE**

#### **Introduction**

At graduation ceremonies, educators frequently tell students that the staff have attempted to motivate, challenge and equip them for the outside world in addition to imparting knowledge and skills. Schools are prepared to measure their success in imparting knowledge; however, the broader goals of motivating and challenging are seldom defined and probably never measured. Recently educators have been increasingly challenged by society to evaluate the schools in social-psychological terms. Those in leadership positions today are talking more about quality of education and not simply about bigger schools. The implication is that educators must change their emphasis from goals which are basically economic in nature to goals which are essentially psychological; from a concentration on what we have to a concern with well-being.

#### **Quality of Life Literature**

Quality of school life research evolved from the quality of life (QSL) research begun almost 30 years ago. The focus of this research is not on the technological, physical, and economic aspects of living, but on psychological and social concerns.

...the notion of quality of life...is somewhat different from the one used by the news media and by most public officials. The more usual meaning is related to the environment and to external circumstances of the individual's life -pollution, quality of housing, aesthetic surroundings, traffic congestion, incidence of crime, and the like...And [these] have the additional feature that they appear to be more manageable by municipal, state, and national programs than attitude and feelings. But they form only a limited aspect of the sum of satisfaction that make life worthwhile. An important question for policy is whether they constitute a major share of an individual's well-being or whether they are dominated by factors such as sense of achievement, love and affection, perceived freedom and so on. To answer this question, a somewhat deeper look has to be taken at quality of life as the individual experiences it. [Dalkey, 1972, p.9]

Sheldon and Land (1972) stated that the measurements of the social life of members of society, "tend to be derived from one of the measurement domains in the life span of an individual; objective conditions, subjective value-context, and subjective well-being" [p. 139]. Quality of life and well-being are sometimes used interchangeably. Well-being is subjective and concerned with the individual's feelings, satisfactions, and frustrations rather than with objective external conditions. According to Scheussler and Fisher (1985, p. 131) the following psychological factors have been studied in Quality of Life research:

- a person's sense of well-being, his or her satisfaction or dissatisfaction with life, or happiness or unhappiness. (Dalkey & Rouke, 1973)
- feelings of love and self-realization arising from interpersonal relationship. (Allardt, 1976)

- perception of the worth or value of life. (Michalos, 1980)
- a dynamic blend of satisfaction elicited by freedom from hunger and poverty, opportunity for personal growth, self-fulfillment and self esteem. (Report of the President's Commission for a National Agenda for the Eighties, 1980)

The concept of well-being is important in the social sciences because one's feeling of well-being shapes perceptions, affects judgments, influences behaviour and helps govern various social actions.

We suggest that a fully developed set of social indicators might consist of two parallel series: one indicating how people themselves evaluate various aspects of their lives; and the other indicating the external or environmental conditions relevant to each of those aspects. (Andrews & Crondall, 1976, p. 4)

The perceptual indicators compliment the externally based ones because they provide different but no less important information about individual well-being.

### Global Satisfaction

Global satisfaction refers to the general satisfaction or happiness which a person feels. In their early research on developing measures for the mental health of individuals, Bradburn and Caplovitz (1969, p. 12) found that the Positive Affect Scale (satisfaction) yielded no information as to his or her score on the Negative Affect Scale (dissatisfaction) although both scales correlated strongly with overall happiness. One conclusion which may be made from this study

is that the absence of dissatisfaction does not necessarily mean the presence of satisfaction.

Later other major studies (Campbell, Converse & Rogers, 1976; Andrews & Withey, 1976; and Burt, Wiley, Minor & Murray, 1978) included measures for general satisfaction, positive affect and negative affect as well as measures of satisfaction with specific domains. To distinguish between general satisfaction or happiness, and satisfaction about something in particular, it is now customary to speak of global satisfaction and domain - specific satisfaction.

#### Domain - Specific Satisfaction

Research (Andrews & Withey, 1976, Williams & Batten, 1981, Bulcock & Beebe, 1988) confirms the idea that "people could and did divide their lives up into domains that, although not isolated, were separate enough to be identified and evaluated as distinguishable parts of life" (Andrews and Crondall, 1976, p. 11). Domain-specific satisfaction, then refers to satisfaction about something in particular.

Although researchers (Campbell, Converse & Rogers, 1972; Burt, Wiley, Minor & Murray, 1978) define the quality of life as a general sense of well-being, they "prefer to study domain-specific satisfaction because of a greater relevance for public policy" (Schussler & Fisher, 1985, p. 131). According to Campbell, Converse and Rogers (1976) measures of



specific domains provide information which makes it possible to "examine the patterns of relationships between the specific measures of satisfaction and the contribution of each specific measures to an overall measure of life satisfaction" [p. 12]. The trend has been to focus research on a particular life domain, such as education, because the conclusions and recommendations drawn can be specific and relevant to that domain.

### **Quality of School Life**

In 1976, Epstein and McPartland reported on their measure of quality of school life that was based upon emerging models in the quality of life research. They reported a measure which incorporated three scales: a measure of general satisfaction with school; a measure for commitment to classwork; and a measure for reaction to teachers. This appears to be the first effort to generalize from the quality of life research to the quality of school life.

Williams and Batten (1981) developed scales to measure the quality of school life borrowing "a basic structure from social indicator models of quality of life developed over the past fifteen or so years (for example, Andrews & Withey, 1976; Campbell, 1981)" [p. 49]. A total of seven scales were used, three of which measured well-being as summarized by Burt, Wiley, Minor and Murray (1978), and four scales measured the

domains of schooling as described in the Spady and Mitchell (1977) model of schooling. These measures used by Williams and Batten (1981) are as follows:

a general affect scale which requires a general evaluation drawing from a full range of experiences and uses questions such as "school is a place where I really like to go". [p. 30]

a positive affect scale which is concerned with a number of specific positive qualities of life such as pride and excitement and uses questions such as "school is a place where I feel successful". [p. 30]

a negative affect scale measures specific negative qualities of life such as loneliness and depression and uses questions such as "school is a place where I feel bored". [p. 30]

an opportunity domain scale measures the relevance of schooling and uses questions such as "a school is a place where learning is easy for me". [p. 31]

an adventure domain scale measures the degree to which school is intrinsically rewarding and uses questions such as "a school is a place where I like to learn new things". [p. 31]

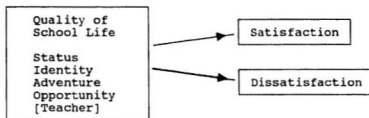
an identity domain scale measures the development of self-awareness in relation to the larger society and uses questions such as "a school is a place where I learn to get along with other people". [p. 30]

a status domain scale measures the prestige of the student [p. 10] and uses questions such as "school is a place where I feel important". [p. 30]

### Schooling Satisfaction and Dissatisfaction

Research (Bradburn & Caplovitz, 1969; Campbell, Converse & Rogers, 1976; Andrews and Withey, 1976; and Burt, Wiley, Minor and Murray, 1978) has shown that well-being is a multi-dimensional concept. Williams and Batten (1981) using the model reported by Burt, Wiley, Minor and Murray (1978) reported a measure using three dimensions of well-being; general affect, positive affect and negative affect [p. 49]. They did not capture the differences between general affect and positive affect, most likely because "we failed to distinguish between feelings about life in school overall, and the feelings arising out of happenings during the past week" (Williams & Batten, 1981, p. 52).

In this study both the positive affect (satisfaction) and negative affect (dissatisfaction) will be used as measures of well-being. It is expected that in schooling these two dimensions of well-being may co-vary negatively. The relationship between these two output variables and the domains in quality of school life (QSL) are depicted in Figure 2.1.



**Figure 2.1. Relationships between QSL and the dimensions of Well-being.**

#### Domains of Quality of School Life

The domains of the quality of school life are derived largely from Spady and Mitchell's four domains of schooling. Williams and Batten (1981) reported measures for these same four domains of schooling: status, identity, adventure and opportunity. They were surprised when an unpredicted fifth domain-teacher emerged from the adventure and opportunity items which dealt with teacher-student interaction (Williams & Batten, 1981, p. 51). It is expected that in schools the students perception of these domains contributes to his or her sense of well-being. Figure 2.1 shows the direction of causality.

As shown in Table 2.1 Spady and Mitchell's four domains correspond to four expectations held by society for the school and to the corresponding structures set up by the schools to meet each of these four expectations. The argument will now be presented in more detail with the teacher domain identified by Williams and Batten included immediately after.

**Table 2.1**

**The logic of the Domains.**

Social Expectations	School Structures	Student Experiences
Technical Competency	Certification	Opportunity
Personal Development	Instruction	Adventure
Social Integration	Socialization	Identity
Social Responsibility	Supervision	Status
[Role Model]	[Interactions]	[Teachers]

### Social Expectations of Schooling

School is "an action system for interpreting individual expectations for personal fulfillment with societal expectations for the schools to develop the structures necessary to provide for the nurture of personal development, competency, responsibility and integration among students."

(Mitchell & Spady, 1977, p. 41). From this model, which envisions schools as organizations through which people are linked to a larger social environment, four societal expectations were identified as being responsible for the creation and maintenance of schools. According to Mitchell and Spady (1977, p. 9) schools are expected:

1. to certify the level of achievement or competency of students;
2. to facilitate personal development (physical, emotional, and intellectual);
3. to promote social integration and development among different groups; and
4. to nurture each student's sense of responsibility for the consequence of his/her own personal action.

#### Structures for Implementing Social Expectations

To implement each of these four expectations, according to Williams and Batten (1981, p. 9) schools have developed the following organizational structures:

1. certification structures, which enable students who have reached agreed standards of competence to qualify for certificates, awards and promotion;
2. instruction structures, which promote personal development through learning and experimentation;

3. socialization structures which encourage students to participate in the social system of the school in order to achieve social integration; and
4. supervision structures which guide the development of social and personal responsibility through the learning of prevailing social norms and values.

#### Student experiences from schooling

Moreover, according to Williams and Batten (1980, p. 10), the four expectations can be met only if students are attracted to them and respond to the institutional structures which embody those expectations. The student responds to each of the institutional structures and societal expectations in such a way as to provide interrelated experiences. Those student experiences which correspond to the school structures can be defined as Opportunity, Adventure, Identity, and Status.

1. Opportunity is the student's perception of the certification structure. Schooling is important (or schooling is relevant) only if it enables the student to qualify for real and desirable future benefits.
2. Adventure in learning is an experience which makes learning intrinsically rewarding and leads to self-motivation. This experience is universally recognized by educators for its importance, yet is most elusive in definition, operation and evaluation.

3. Identity is the development of self-awareness in relation to a larger society. In order to maximize social integration students become aware of their personal strengths and limitations in relation to society.
4. Status is the acknowledgement of the prerogatives and prestige of a student made by teachers and fellow students. It is instrumental in developing a sense of social responsibility.

#### Teacher Factor

However, as indicated in Table 2.1, there is an additional domain not mentioned by Mitchell and Spady, but identified by Williams and Batten (1981), namely the Teacher domain. Because such a large amount of the time in school involves interaction between teachers and students, the teacher makes a significant difference to the student's adaptation to school and their acquiring cognitive skills. The Leaving Early Report concluded "there is a wealth of evidence for the conclusion that one of the most important elements in the students's life is the teacher" (p. 113). When Williams and Batten analyzed the "four domains" data of the quality of school life project, a fifth dimension (which they called teacher factor) emerged. In terms of societal expectations teachers should be role models. The role model structures are provided in the schools through formal and informal teacher-student interactions giving the students



opportunity to observe, imitate or experience the value system of adults. This teacher experience contributes to the students perception of adult values such as fairness, concern for others, and co-operation.

Student response to these experiences may be influenced by their own expectations of what they want from school. Williams and Batten (1981, p. 12) categorized student expectations as "self-worth, intimacy, adequacy, security, autonomy, honour, acceptance, and potency". Because of student expectations schools are pressured to act as vehicles for personal fulfillment. "The individual [student] therefore initially responds to the school organization on the basis of its concrete capacity to support or frustrate these personal fulfillment expectations. Thus, personal expectations further constrain and shape the school as an organization, pressuring it to serve as a vehicle for personal fulfillment as well as for societal expectations" (Mitchell & Spady, 1977, p. 6).

Although the five aspects of student experiences are distinct constructs, each is routed in a different societal expectation and a different institutional structure. There is a lot of overlap between the areas identified. The five domains are not intended to be exclusive; however, research (William & Batten, 1981) has shown that each is an indicator of the quality of school life.

### **Responsiveness of School Satisfaction and Dissatisfaction to the Domains in Quality of School Life**

Ongoing research by Memorial University researchers (Bulcock & Beebe, 1988) indicates that the relative importance of these domains changes between different grade levels. For example, in the elementary grades there seems to be a stronger relation between Satisfaction and Adventure than between Satisfaction and Opportunity; near the end of high school this changes with a stronger relation between Satisfaction and Opportunity emerging and a weaker relation between Satisfaction and Adventure.

#### Adventure

It is anticipated that students who like school work will obtain higher grade averages and will define the quality of school life more favorably than will those who do not like school. When people want to read and write and find solutions to the problems being posed, they may have a motivating interest in seeking solutions. Colton and White (1985) found that "perceived availability of resources is positively related to student satisfaction" (p. 244). It may be concluded that "students are likely to participate in a wider range of school-related activities, both academic and extracurricular, if they have generalized feelings of satisfaction with school" (Colton & White, 1985, p. 244).

### Opportunity

Teachers are trained to teach the content of the traditional academic disciplines, and they often assume that the ability to deal with social issues will be acquired incidentally through the study of these disciplines. It is anticipated that students who perceive schooling to be relevant to their social environment will express greater satisfaction with schooling and define this quality domain more favorably than will those who do not perceive schooling to be as relevant. The Royal Commission on Employment and Unemployment (1986, p. 115) concluded that students in rural schools where the schooling experience may have less meaning in their lives, do not achieve as well as students in urban schools where the schooling experience has more meaning. From a student's perspective, then the certification function of schooling is only attractive if it enables the student "to qualify for desirable and real future opportunities; the concern here is for relevance of schooling" (Williams and Batten, 1981, p. 10). "Young people want and need assistance and direction, but they also need and want opportunities to pursue their own agendas, to cultivate their own interests, to follow their own leads" (Frymier, 1987, p. 99).

### Teacher Factor

The Leaving Early Report (1984) found that the second most important reason for students leaving early was that they did not like the teacher and concluded that "there is a wealth of evidence for the conclusion that one of the most important elements in a student's life is the teacher" (p. 113). "There are bad teachers and bad schools as well as bad pupils. Others allow children to overcome handicap and to meet new challenges. Clearly schools and teachers can and do have an independent effect irrespective of pupils' background and social class" (Steed, 1985, p. 8). It is anticipated that in an orderly and positive working environment, where there is consistency, consensus and agreement between teachers, students and the principal, students will evaluate the quality of school life more highly than in a contrasting situation, in which teachers and students arrive late for class, break early for lunch, do not bring books and materials to class, and where assignments are not completed or are marked late.

In the classroom the teacher is the leader for students and the teacher's behaviours and attitudes also affect the school's climate" (Sammons, 1987, p. 8). According to Frymier (1987, p. 98), the best teachers are not only characterised by their output behaviour (punctuality, presentation structure and content) but they also exhibit skills in intake behaviour (sensitive to student interests, abilities, needs, motivations, previous experience, and problems). Given that

intensive teacher-student interaction occupies a large portion of their school day, it is logical to assume that the quality of this interaction ought to be a major concern to students and it might well influence their well-being. It is anticipated that students who rank this domain more highly will also express more satisfaction with schooling.

### Identity

Mitchell and Spady (1977) identified Identity as one of the domains in quality of school life. Williams and Batten (1981) reported a scale to measure this domain. Although Epstein and McPartland (1976) found a relationship between student satisfaction and quality of school life, the domain Identity was not part of that study. However, as a result of these studies it is anticipated that those who define this domain more highly will also express greater satisfaction with schooling.

### Status

The feeling of status is usually derived from others. "All participants in the school culture must feel important, needed and worthwhile" (Wayson & Lasley, 1984, p. 419). "Students behaved better and achieved more when teachers

treated them in ways which emphasized their success and good potential rather than those which focused on their failings and shortcomings" (Rutter, 1979, p. 196). Wayson and Lasley reported that the philosophy of one high school is "to get everyone involved. We encourage wide participation in all extracurricular activities and attempt to implement a policy of catching students doing good things and then rewarding them for their accomplishments" (p. 419). It is anticipated that when the student's perception of status is enhanced they will report a higher level of well-being.

In general, it is anticipated that students who report high satisfaction with the quality of their school experiences are those who are comfortable with the demands (regulation for behaviour) and opportunities (participation) of the school setting, are industrious and ambitious, have more positive self-evaluation, and perceive positive evaluation messages from teachers, parents and fellow students.

#### **Variables which Influence the Quality of School Life**

Colton and White (1985) researched "some of the different characteristics of satisfied and dissatisfied male and female high school students in city and suburban schools" (p. 245). Epstein and McPartland studied the differences in sex and SES on student satisfaction (p. 17). This study will look at four

variables: Sex, Age, SES and Location which may influence the students' perception of the quality of school life.

### Sex

Studies (Cepywnyk, Pawlovich & Randbawa, 1983, Watson, 1975, Anderson, 1982, Pope, 1984) have found that more males than females leave school early and according to Pope (1983), male leavers do not have as positive a view of school as do the females (p. 18). According to Epstein and Mcpartland (1976) "virtually all earlier work, using single-dimensional satisfaction with school measures, reports females with significantly higher scores than males" (p. 22). In their own research Epstein and McPartland found only a slight difference between sexes for general satisfaction, but there was no difference in their perception of the domains of school life. The Williams and Batten Scale has identified additional domains of quality of school life which may provide more information for understanding the differences by sex. Colton and White (1985) found the "gender differences appear to be more qualitative than quantitative. From the interview responses, satisfied females seem to be so for more social reasons, such as extracurricular activities, popularity, and having friends in school among the students and staff" (p. 245).

Because dissatisfaction is not necessarily the obverse of positive satisfaction, the position taken in this study is that there are no sex differences with regard to dissatisfaction.

### Age

Epstein and McPartland (1976) found that quality of school life scores decrease as the grade level increases, with the biggest decrease occurring in one dimension, which they identify as commitment. More recently research (Bulcock & Beebe, 1988) has attempted to understand this change in quality of school life over time. It has been argued that with age the students' needs change. Whereas adventure is important and opportunity is almost non-existent in the early elementary grades the reverse becomes true near the end of high school and in post secondary training.

However, the data to be analyzed is from one grade level only and because of the narrow range of ages in the study no significant differences between ages is expected to emerge.

### Socioeconomic Status

Epstein and McPartland found minimal and statistically insignificant differences by socioeconomic status in how students define quality of school life. Conventional wisdom,



however would suggest that there is a positive relation, because there is more continuity between the culture and language of the school and the homes of high SES students and homes of students with better educated parents.

### Location

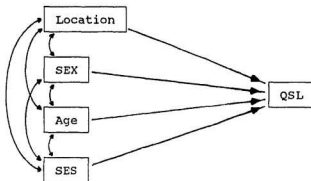
Recent research (Rothstein, 1987; Riggs, 1987; Pope, 1984) have studied the size of the community in which the students live, rather than the class size or school size. According to these studies, urban residence is almost always associated with better education than rural residence, regardless of age, sex, maturity, or parents' education. According to Randhawa and Hunt (1987, p. 139):

Randhawa and Fu (1973) point out that much has been written about rural pupils and many ideas advanced to account for their possible disadvantages in terms of the larger society (Jenkins, 1963; Taylor & Jones, 1963). For example, it is reported that socioeconomic status of rural youth plays an important role in aspirations (Taylor & Jones, 1963). This study and others (Sperry, 1965) indicated that rural youth from a higher socioeconomic level had higher educational aspirations and took greater advantage of educational opportunities than rural youth from lower socioeconomic levels.

Colton and White (1985) reported "city students reported higher levels of satisfaction than suburban students" (p. 246). The reason offered for this difference was "what school offers in the way of need satisfaction may be relatively good

compared to what the home and other alternatives in the neighborhood setting offer" (p. 245).

Figure 2.2 illustrates the relationship between QSL and the four extraneous variables; Age, Sex, Location, and SES.



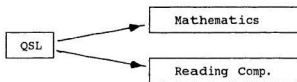
**Figure 2.2      Relationships between Sex, Age, SES, Location and QSL.**

### **Responsiveness of Achievement to Quality of School Life**

In her research, Colton (1985) found a "small but significant positive relationship to have been demonstrated between positive attitude toward school and grade point average as well as performance on standardized achievement tests" (p. 236).

It is anticipated, however, that this positive relationship is subject dependent and may differ for mathematics achievement and reading comprehension. Research (Dave, 1963, and Coleman, Campbell, Hobsen, McPartland & Hood, 1966) has shown that home influences and school influences in determining achievement are subject dependent. Coleman (1975) concludes that "home background variations show slightly stronger effects on reading achievement than literature and science for 14-year-olds" and "school variables account for somewhat less variation in reading achievement than does literature or science" (p. 382).

Figure 2.3 displays the model indicating that Mathematics and Reading Comprehension are expected to respond to QSL.



**Figure 2.3.** Conceptual model of the Response of Achievement to QSL.

### Analytical Models

The relationship between quality of school life and two outcomes of learning will be analyzed. Figure 2.4 is a conceptual model which depicts this relationship. It is designed to estimate the impact of QSL on cognitive objectives (Mathematics Achievement and Reading Comprehension) as well as on Satisfaction and Dissatisfaction.

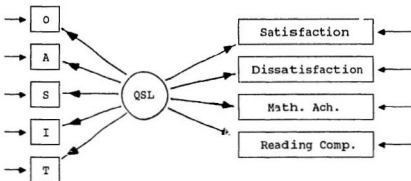
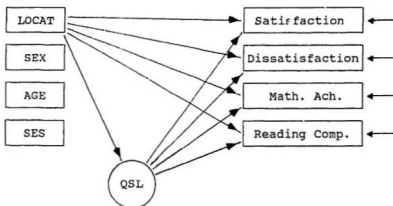


Figure 2.4. Basic model.

Positive relationships are expected to emerge between each of the dependent variables, except for Dissatisfaction which is expected to have a negative relationship. It is anticipated that Mathematics Achievement and Reading Comprehension will have a positive variance with Satisfaction and a negative

variance with Dissatisfaction. Figure 2.4 also depicts how well the construct, QSL, reflects each of the five domains of quality of school life.

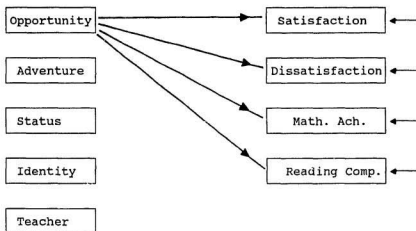
Figure 2.5 is a recursive model which is designed to investigate the relationship of QSL to the independent variables SEX, AGE, SES and LOCAT. It also measures responsiveness of the dependent variables, Satisfaction, Dissatisfaction, Mathematics Achievement and Reading Comprehension to these independent variables and QSL.



- a. Paths exist between each of the variables although only those between LOCAT, QSL and the dependent variables are shown.

Figure 2.5. Recursive model (by SEX, AGE, SES and LOCAT).

Figure 2.6 is a disaggregated model used to measure the responsiveness of the outcome variables to each of the domains of Quality of School Life.



- a. Paths exist between each of the independent variables and each dependent variable although only the paths associated with the domain opportunity are shown.

Figure 2.6. Disaggregated model.

### Measurement Models

The five quality domains of schooling are opportunity (O), Adventure (A), Status (S), Identity (I) and Teacher (T). Each domain which constitute the QSL instrument is a construct containing several latent variables. Figure 2.7 is a disaggregated model which illustrates the relation of test items to each of the QSL domains.

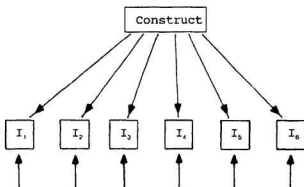


Figure 2.7. Measurement model for the quality domains of schooling: An example.

The outcome variables, Dissatisfaction and Satisfaction are also constructs which will be measured through several items in the instrument. Figure 2.7 illustrates the relationships between the construct and test items representing that construct. The cognitive outcomes (Reading Comprehension and Mathematics Achievement) will be obtained from the scores of a standardized test.

The independent variable, Socioeconomic Status, will be measured as shown in Figure 2.8. Socioeconomic Status will be constructed from the following variables: father's occupation; mother's occupation; father's education; mother's education; and family size. Other independent variables are; Sex, Age and School Location. These variables will be recorded through information supplied on the questionnaire.

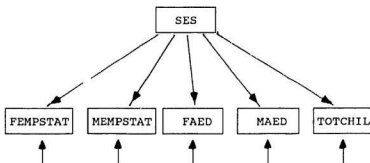


Figure 2.8. Measurement model for the SES construct.



### **Hypotheses**

To examine the major research questions posed in Chapter I, the following hypotheses will be tested. Each of the hypothesis relate to one of the paths found in the models in Figure 2.5 and Figure 2.6. The hypotheses will be divided into three groups; those relating to the Quality of School Life, those relating to achievement outcomes and those relating to student well-being.

#### Hypotheses Relating to QSL

1. There will be a significant relationship between location and student perception of QSL, which will favour urban students.
2. There will be no significant relationship between Sex and student perception of QSL.
3. There will be a significant negative relationship between Age and student perception of QSL.
4. There will be no relationship between SES and student perception of QSL.

### Hypotheses Relating to Achievement

5a. There will be a significant relationship between Location and Mathematics Achievement which will favour the urban students.

5b. There will be a significant relationship between Location and Reading Comprehension which will favour the urban students.

6a. The relationship between Sex and Mathematics Achievement will be in favour of males.

6b. The relationship between Sex and Reading Comprehension will be in favour of females.

7a. There will be a significant negative relationship between Age and Mathematics Achievement.

7b. There will be a significant negative relationship between Age and Reading Comprehension.

8a. There will be a significant positive relationship between SES and Mathematics Achievement.

8b. There will be a significant positive relationship between SES and Reading Comprehension.

9a. There will be a significant positive relationship between student perception of QSL and Mathematics Achievement.

9b. There will be a significant positive relationship between student perception of QSL and Reading Comprehension.

9c. There will be a stronger relationship between student perception of QSL and Mathematics Achievement, than between their perception of QSL and Reading Comprehension.

Hypotheses Relating to Student Well-being.

10a. There will be a significant relationship between Location and Satisfaction, which will favour the urban students.

10b. There will be a significant relationship between Location and Dissatisfaction, which will favour the rural students.

11a. There will be a significant relationship between Sex and Satisfaction, which will favour females.

11b. There will be no significant relationship between Sex and Dissatisfaction with schooling.

12a. There will be a significant negative relationship between Age and Satisfaction with schooling.

12b. There will be a significant positive relationship between Age and Dissatisfaction with schooling.

13a. There will be a significant positive relationship between SES and Satisfaction with schooling.

13b. There will be a significant negative relationship between SES and Dissatisfaction with schooling.

14a. There will be a significant positive relationship between student perception of QSL and their Satisfaction with schooling.

14b. There will be a significant negative relationship between student perception of QSL and their Dissatisfaction with schooling.

### CHAPTER 3

### METHODOLOGY

#### Introduction

The data used in this study was taken from The Quality of School Life Project (QSLP). That project was sponsored by the Department of the Secretary of State, Government of Canada, and conducted by a group of researchers at Memorial University of Newfoundland. The QSLP group consisted of Jeffrey Bulcock (principal investigator), Dr. J.R. Covert, Dr. W.J. Gushue, Dr. R. Magsino, and Dr. A. Singh, assisted by Mrs. Marguerite Baker. (cited from a letter to Mr. M. Gushue from J. Bulcock, see Appendix E.)

The project was a longitudinal study covering two academic years. The instruments consisted of a parents' questionnaire, and, for each student, a QSL questionnaire and the Canadian Test of Basic Skills. The study was conducted at the high school level. This thesis used only a small part of the available High School data collected in the QSL project.

#### Type of Instrument

The instrument contained a sixty-one item questionnaire with a four-point response scale. Williams and Batten (1981)

argue for a four-point scale which does not include a "half agree" middle category for the following reasons:

The standard argument asserts that those answering neutral categories of this kind are a heterogeneous group consisting of those who do not understand the question, those who have no opinion, those who are ambivalent, plus those with low intensity opinions, both positive and negative. The second part of this argument important here is that this heterogeneous category inflates the amount of error variance in measures of association between items in ways not entirely predictable. (p. 29)

The advantage of a four-point scale is that students holding low intensity opinions will have to express that opinion, either positively or negatively.

### Description of the Student Instrument

The following items were used to construct each domain. Each item completes a sentence which begins with "School is a place where ..." and this phrase must be inserted at the beginning of each item. The number at the end of each sentence refers to the item number in the questionnaire. (See Appendix A.)

#### Status (7 items)

- I know that people think a lot of me. (3)
- people think I can do a lot of things. (10)
- people come to me for help. (17)
- I feel important. (24)
- people credit me for what I can do. (31)
- teachers ask me to help out. (38)
- I am a member of a "leading crowd". (45)

**Identity (11 items)**

- I sometimes feel inferior to my friends. (6)
- I dislike being ridiculed by my friends for the way I dress. (13)
- I have lengthy conversations with my friends of the opposite sex. (20)
- I it is important to me what my friends think of me. (27)
- I am a different person than at home. (34)
- I strive never to let my friends down. (41)
- I would like to be someone different than myself. (48)
- what your friends think about you is more important than what you think about yourself. (52)
- I spend most spare time doing my own thing. (57)
- I usually agree to go along with my friends. (60)
- I value my individualism; that is being different from others. (61)

**Teacher (8 items)**

- teachers treat me fairly in class. (7)
- teachers are usually fair. (14)
- teachers listen to what I say. (21)
- teachers give me the marks I deserve. (28)
- teachers help me to do my best. (35)
- I like my teachers. (42)
- teachers really talk with the students, not just at them. (53)
- there is one teacher I am friends with. (58)

**Opportunity (9 items)**

- I can do well enough to become successful. (4)
- I am happy with how well I do. (11)
- I know the sorts of things I can do well. (18)
- I know how to cope with the work. (18)
- I get satisfaction from the work I do. (25)
- I feel good about my work. (32)
- I doubt that much I do will be useful to me. (46)
- I can handle my school work. (50)
- one has to do well to get a job. (55)

**Adventure (10 items)**

- I like to learn new things. (5)
- I find the work interesting. (12)
- I can get so interested in something I don't want to stop. (19)
- I like all my subjects. (26)
- I do more work than is actually required. (33)
- work lacks the challenge necessary to make it interesting. (40)
- I can hardly wait for the last bell. (47)
- I am more interested in good grades than in the knowledge for its own sake. (51)
- I am genuinely interested in my work. (56)
- my friends and I get together on our own time to talk about things we have learned in class. (59)

There are four dependent variables, Satisfaction, Dissatisfaction, Mathematics Achievement, and Reading Comprehension. For constructing the two domains of well-being, namely Satisfaction and Dissatisfaction, several items for each were used. Again, the phrase "School is a place where ..." precedes each item as was used in measuring the domains and the item number from the questionnaire appears at the end of the sentence.

**Satisfaction (7 items)**

- I like to be. (1)
- I get enjoyment. (8)
- I feel great. (15)
- I really like to go. (22)
- learning is a lot of fun. (29)
- I feel happy. (36)
- I feel proud to be a student. (43)

**Dissatisfaction (9 items)**

- I feel lonely. (9)
- I get upset. (16)
- I feel restless. (2)
- there is nothing exciting to do. (23)

- you feel bossed around too much. (30)
- I get annoyed at what goes on. (37)
- I get depressed. (44)
- I feel bored. (49)
- if I had my way I would not attend. (59)

The dependent variables, Mathematics Achievement and Reading Comprehension were obtained from a standardized test (Canadian Test Basic Skills) given to the students as one of the instruments used for the QSL Project.

### **Description of the Parent Instrument**

The questionnaire sent home to the parents contained 116 items and a consent form. Students who returned the signed parental consent form to the school were tested using the QSL questionnaire and the Canadian Test of Basic Skills. The complete Parent Instrument is given in Appendix C. For this study only items which may best represent the socioeconomic status of the family were selected from the parent questionnaire to be used for the SES construct.

Question 98 and 99 provides information on the educational level of the father and the educational level of the mother. The following question has a seven-point scale and was used as a proxy for social status.



98./99. How much education have the father and mother had?  
[Check one in each column.]

	father	mother
Elementary school only.	___	___
Junior high school only (Grades 7-9).	___	___
Some high school only (Grades 7-10).	___	___
Finished high school.	___	___
Vocational - Trades school.	___	___
Some university.	___	___
Finished university.	___	___
Other training (not degree or diploma, e.g., company sponsored course, military training, police training, etc.	___	___
Advanced education, post graduate degree (e.g., Master's, Ph.D., M.D., Ll.B., C.A., etc.)	___	___

Questions 100 and 113 were selected as proxy for the  
economic status of the family.

	boys	girls
100. How many children are there in the family?	___	___
113. At the present time what is the employment status of the father and mother?		
	father	mother
Housewife/househusband.	___	___
Unemployed (looking for work).	___	___
Unemployed (not looking for work).	___	___
Self-employed.	___	___
Employed (part-time).	___	___
Employed (full-time).	___	___

Although present employment status and size of the family may not accurately represent the economic status of a family, conventional wisdom would have it that those employed full time with a small family would have higher economic status than those unemployed with a large family.

### **The Sample**

The sample used for this study is all of the sample used in The Quality of School Life Project (QSLP). The QSLP sample was taken from the population of grade ten students in Newfoundland during the school year, September 1985 to June 1986. The population was stratified by community size forming two categories (rural and urban). The schools were chosen from each category with the two schools which did not wish to participate in the study being replaced by two schools from the corresponding category. There was no attempt to balance the sample by sex because the sample was selected by school. The schools selected for testing had 484 students or approximately 9% of the population of Grade 10 students. However not all of these students participated in the study. Only those students who returned a signed consent form from their parents were retained and are called respondents throughout this study. The external validity or generalizability of the findings may be affected by the extent to which the respondents represent the population being studied.

### Respondents and Non-respondents

Information concerning the respondents was obtained from the QSLP data file. First, by using the condescriptives command in the SPSS-X program the total number of students in each school was obtained. Then using the select if command condescriptives for students who had returned the parents consent form and had completed the questionnaires was obtained. The percentage of respondents to the total students was calculated. Similarly the percentage of respondents by sex and by age were calculated.

From Table 3.1 we find the sample biased towards rural schools because of the higher percentage of rural respondents.

Table 3.1

Distribution of Respondents by Location

Location	Students	Respondents	Percentage Respondents
Urban	336	193	57%
Rural	168	124	74%
Total	504	317	62.9%

Since there was a greater number of females than males who answered the questionnaires the sample is biased toward the females (see Table 3.2).

Table 3.2

Distribution of Respondents by Sex

Sex	Students	Respondents	Percentage Respondents
Males	233	135	58%
Females	271	182	67%

In this sample there was a higher percentage of respondents among the younger students. Thus the sample is biased toward the younger students in the school population.

Table 3.3  
Distribution of Respondents by Age

Age	Students	Respondents	Percentage Respondents
14	1	1	100%
15	307	212	69%
16	141	83	60%
17	28	13	46%
18	7	2	28%
missing cases	20	5	

One reason for the low percentage of respondents (62.9%) may be the requirement for students to return a parental consent form. When large numbers of parents do not consent to have their children used as subjects in studies such as this, the sample becomes a weak representation of the population studied.

The reason(s) for differences in the percentage of respondents was not examined in this study. However, the sample was shown to be biased toward rural students, females and younger students. Further research may find that some groups of students participate in too many studies, lose interest and become non-respondents.

### Collection of Data

Prior to the collection of data, approval and support for the study was given by the Department of Education and the Faculty of Education Ethics Committee. Superintendents and principals involved in the sample were informed of the study, and their approval and cooperation requested. A letter requesting parental permission for students to participate in the study, with a stamped self-addressed return envelope was sent home to the parents. The rate of return for the parental consent forms ranged from 60% in some schools to 100% in others.

The achievement test and QSL instrument were administered to the 15 year old (grade 10) students in February and March 1986. The exact age of these students was converted to months for analysis purposes. The mothers of participating students were asked to complete a home background questionnaire in April. A contact person or a school coordinator had been appointed from the staff to assist the QSL group with data gathering and test administration. An honorarium of \$100 was given to each school coordinator for services rendered February through June, 1986. A thank you note was sent to each of the participating parents and buttons (QSL project, MUN) were given to each participating student. Near Christmas time a pen was also given to each participating student.

### **Analysis of Data**

Each of the domains of Quality of School Life was analyzed using a principal component analysis. The principal component analysis calculates the relative proportion of the variance contributed by each item. Using the appropriate weights computed for each item, in a construct, scores were computed for that construct.

A second-order principal component analysis was used to analyze and compute the latent construct, QSL, from the domains previously analyzed. The dependent variables, Satisfaction and Dissatisfaction, as well as the independent variable SES were, also analyzed and each latent variable computed using the principal component analysis and the appropriate items from the instrument. Alpha reliability a measure of internal consistency was also calculated for each domain (cf. Borg & Gall, 1983, p. 285).

Scattergrams were used to examine the relationships hypothesized in Chapter 2. "Using a scattergram to represent graphically the relationships between the variables involved in a correlational study is particularly helpful in detecting nonlinear relationships" (Borg & Gall, 1983, p. 592). An examination of the scattergrams (see Appendix D) did not reveal any markedly nonlinear relationships.

The relationship between variables was analyzed using the Pearson product-moment correlation coefficient. Borg and Gall (1983) stated that "the correlational method allows the

researcher to analyze how several variables, either singly or in combination, might affect a particular pattern of behavior" (p. 575). Here scores computed for QSL were compared with the exogenous variables, SEX, AGE, SES, and LOCAT to find out the degree of their relationship (see Figure 2.2). Mathematics Achievement, Reading Comprehension, Satisfaction, and Dissatisfaction were each correlated with QSL, SEX, AGE, SES, and LOCAT. The 0.05 level of probability was accepted as evidence of a significant relationship. The SPSS-X program was used to perform the necessary statistics on the computer.

Multiple regression was used to examine the magnitude of the relationships between independent variables and dependent variables as well as between QSL and the dependent variables. This procedure uses the "principles of correlation and regression to help explain the variance of a dependent variable by estimating the contributions of two or more independent variables to this variance" (Kerlinger & Pedhazur, 1973, p. 4). The multiple regression in this study is based on the recursive model (see Figure 2.5).

Path analysis was conducted using the results from the multiple regression analysis (see Figure 2.5). Borg and Gall (1983) stated that "path analysis is a method for testing the validity of a theory about causal relationships between three or more variables that have been studied using a correlational research design" (p. 606).



In this study SEX, AGE, SES, and LOCAT are exogenous variables. That is they lack a hypothesized cause. QSL, Satisfaction, Dissatisfaction, Mathematics Achievement, and Reading Comprehension are all endogenous variables with hypothesized causes as shown by the arrows in the recursive model (see Figure 2.5). The path coefficients are the same as the Beta coefficients calculated in the multiple regression. "A path coefficient is a standardized regression coefficient indicating the direct effect of one variable on another in the path analysis" (Borg & Gall, 1983, p. 610). Having determined these path coefficients (direct effect) it was also possible to calculate the indirect effects among the variables.

## CHAPTER 4

### ANALYSIS OF THE INSTRUMENTS

#### Introduction

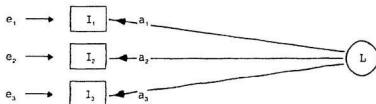
This chapter comments on the measurement models and the analysis of the questionnaires used in the study. Each construct, or linear composite, in the questionnaire was constructed hypothesizing one latent variable which has several indicators that can be observed. These indicators are the corresponding items in the questionnaire. Each model was subjected to a principal component analysis. The unweighted (alpha) reliability and the construct validity were measured. A rigorous analysis of the instrument is beneficial for the following reasons:

1. To test the co-linearity of the items in each theoretical construct; and then to improve the construct, if necessary, by eliminating any items which show poor discrimination.

2. To use information (factor score coefficients, means and standard deviations) from each item analysis to compute a standardized score for each student on that construct.

3. To provide information about the validity and reliability of the instruments to anyone who may wish to replicate this study.

A measurement model was used for each of the latent constructs (unobserved variables) in the study. These latent constructs (also referred to as latent variables) include the quality domains (Opportunity, Adventure, Identity, Status and Teacher), QSL, the outcome variables (Satisfaction and Dissatisfaction), and SES. Each latent variable reflects its observed indicators, which are measurable from the responses assigned to them on the questionnaire. For example the latent variable, satisfaction, is a reflection of the scores on the seven questionnaire items comprising satisfaction. Measures of the components of Satisfaction must accurately represent this latent variable. This is illustrated in Figure 4.1.



L is the latent construct  
 $I_1 - I_3$  are the observed items (indicators  
 for the latent variable)  
 $a_1 - a_3$  are the factor loading  
 $e_1 - e_3$  are the residuals

Figure 4.1 A sample measurement model.

The factor loading tells how well each item correlates with the construct. The residual on each item is calculated by using the formula  $e = (1 - h)^{1/2}$  where  $h$  represents the communality.

A standardized score was computed for each of the latent variables using the general equation;

$$L = a_1(X_1 - \bar{X}_1)/SD_1 + \dots + a_n(X_n - \bar{X}_n)/SD_n$$

where  $L$  is the latent variable score

$a_1, \dots, a_n$  are factor score coefficients computed by dividing the factor loading by the overall eigenvalue.

$(X_n - \bar{X}_n)/SD_n$  is a general equation used to standardize the variable by transforming the raw item score into a standard score with mean of zero and standard deviation one.

Each of the dimensions of QSL was subjected to a principal component analysis before computing a score for that variable. Operating under the assumption that the variance in the items composing the construct would be responsible for the variance in that construct, items were retained only if they had appropriate content and a factor loading greater than .50. The items retained would be ones which appear to be factorially homogeneous and thus could be considered to be a single meaningful construct. The indicators of the latent variables thus retained were used to compute the standardized score for that variable.

QSL is a latent variable which reflects the quality domains of schooling. It was subjected to a principal component analysis, and a standardized score was computed

using the domains Status, Opportunity, Adventure and Teacher as indicators. The latent constructs, Satisfaction, Dissatisfaction and SES were also analyzed and a standardized score computed for each, following the procedure described above.

### **The Domains of the Quality of School Life**

This section reports the principal component analysis for the five domains of the Quality of School Life. Those domains are Opportunity, Status, Adventure, Identity and Teacher. Appendix B has a list of all items analysed for each construct and it reports which of the items were eliminated from each construct as a result of this analysis.

#### **Opportunity**

The correlation matrix for the nine items of the Opportunity Questionnaire is display in Table 4.1 along with the means and standard deviations. Using this matrix, the items were subjected to principal component analysis. The instrument was constructed hypothesizing one construct (opportunity) for the nine items analyzed. Items were eliminated until only those with both appropriate content and a factor loading above .50 remained. Item OP09 which showed

**Table 4.1**

**Correlation Matrix for the Opportunity Domain**

	OP01	OP02	OP03	OP04	OP05	OP06	OP07	OP08	OP09	$\bar{X}$	SD
OP01	1.000									3.420	.611
OP02	.301	1.000								2.952	.806
OP03	.370	.264	1.000							3.408	.614
OP04	.310	.468	.315	1.000						2.952	.683
OP05	.275	.313	.376	.384	1.000					3.071	.664
OP06	.368	.592	.377	.471	.560	1.000				2.983	.649
OP07	.296	.263	.270	.345	.334	.424	1.000			3.075	.820
OP08	.352	.358	.261	.537	.276	.450	.257	1.000		3.020	.684
OP09	.033	.002	.235	.055	.102	.080	.047	.081	1.000	3.563	.661

Determinant of correlation matrix = .0899

Kaiser-Meyer-Olkin measure of sampling adequacy = .8220

a factor loading of 0.16 as indicated in Table 4.2, was the only item.

The remaining items were again subjected to a principal component analysis (see Table 4.3). The alpha reliability for this construct was calculated to be .819. With all item loadings greater than .50 these items became the final version of the construct. The level of opportunity was then calculated for each student using the general formula:

$$OPPORT = FSC_1 (OP01 - \bar{M}_1) / SD + \dots + FSC_8 (OP08 - \bar{M}_8) / SD_8$$

Factor score coefficients are shown in Table 4.2 and the mean and standard deviations are shown in Table 4.1. The factor score coefficient was computed using the formula  $F_{sc} = F_1 \div E$ . (e.g., the factor score coefficient for item OP01 is  $.816 \div 3.579 = .166$ ). Using these figures the level of opportunity was calculated as follows:

$$\begin{aligned} OPPORT = & .166 (OP01 - 3.420) / .611 + \\ & .190 (OP02 - 2.952) / .806 + \\ & .164 (OP03 - 3.408) / .614 + \\ & .204 (OP04 - 2.952) / .683 + \\ & .185 (OP05 - 3.071) / .664 + \\ & .228 (OP06 - 2.983) / .649 + \\ & .163 (OP07 - 3.075) / .820 + \\ & .184 (OP08 - 3.020) / .684 \end{aligned}$$

Table 4.2

## Principal Component Analysis for the Opportunity Domain

	Factor Loadings
OP01	.594
OP02	.676
OP03	.597
OP04	.728
OP05	.665
OP06	.814
OP07	.581
OP08	.658
OP09	.160 *

\* Factor loading is below .50. Therefore, this item was dropped from the Opportunity domain.

Table 4.3

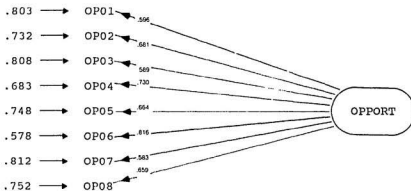
## Principal Component Analysis for the Revised Opportunity Domain

	Factor Loadings	Factor Score Coefficients	Residual
OP01	.596	.166	.803
OP02	.681	.190	.732
OP03	.589	.164	.808
OP04	.730	.204	.683
OP05	.664	.185	.748
OP06	.816	.228	.578
OP07	.583	.163	.812
OP08	.659	.184	.752

Alpha Reliability = .819  
Eigenvalue = 3.579



The measurement model for the latent variable opportunity (OPPORT) is depicted in Figure 4.2. It shows the domain and the extent to which it reflects the observed variables, OP01 to OP08.



Note: The second column of figures in Figure 4.2 displays the factor loadings for each item. The first column displays the residual computed from the formula:

$$\text{Residual} = (1 - \text{factor loading}^2)^{1/2}$$

Figure 4.2. Measurement model: Opportunity domain (OPPORT).

### Status

The seven items depicting Status were subjected to principal component analysis based on the correlation matrix shown in Table 4.5. All items had a factor loading greater than .50 and are acceptable items for this construct (see Table 4.4). The alpha reliability for this variable was .705. Using the factor score coefficients from Table 4.4 the level of Status experienced by each study was calculated as follows:

$$\begin{aligned} \text{STAT} = & .217 (\text{ST01}-2.648)/.648 + \\ & .243 (\text{ST02}-2.780)/.695 + \\ & .226 (\text{ST03}-2.566)/.816 + \\ & .283 (\text{ST04}-2.495)/.679 + \\ & .237 (\text{ST05}-3.034)/.684 + \\ & .230 (\text{ST06}-2.315)/.799 + \\ & .196 (\text{ST07}-2.366)/.929 \end{aligned}$$

Table 4.4

Correlation Matrix for the Status Domain

	ST01	ST02	ST03	ST04	ST05	ST06	ST07	$\bar{X}$	SD
ST01	1.000							2.648	.648
ST02	.289	1.000						2.780	.695
ST03	.116	.328	1.000					2.566	.816
ST04	.410	.276	.305	1.000				2.495	.679
ST05	.175	.361	.297	.341	1.000			3.034	.684
ST06	.200	.202	.244	.373	.306	1.000		2.315	.799
ST07	.245	.215	.221	.309	.091	.213	1.000	2.366	.929

Determinant of correlation matrix = .3376

Kaiser-Meyer-Olkin measure of sampling adequacy = .7643

Table 4.5

## Principal Component Analysis for the Status Domain

	Factor Loadings	Factor Score Coefficients	Residual
ST01	.565	.217	.825
ST02	.632	.243	.775
ST03	.587	.226	.810
ST04	.735	.283	.678
ST05	.614	.237	.789
ST06	.598	.230	.802
ST07	.509	.196	.861

Alpha Reliability = .705

Eigenvalue = 2.598

The measurement model for the latent variable Status (STAT) is depicted in Figure 4.3. It shows the domain and the extent to which it reflects the observed variables ST01 to ST07.

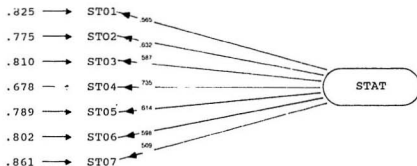


Figure 4.3. Measurement model: Status domain (STAT).

#### Adventure

The ten items depicting Adventure were subjected to principal component analysis based on the correlation matrix shown in Table 4.6. The alpha reliability for this construct was .751. The final selection of items to be used in measuring the Adventure domain proceeded by eliminating items AD05, AD06, and AD10, which had factor loadings of less than .50. The remaining items were again analyzed (see Table 4.8) and used in the final version of the construct.

Table 4.6

## Correlation Matrix for the Adventure Domain

	AD01	AD02	AD03	AD04	AD05	AD06	AD07	AD08	AD09	AD10	$\bar{X}$	SD
AD01	1.000										3.461	.583
AD02	.317	1.000									2.607	.676
AD03	.275	.332	1.000								2.898	.963
AD04	.295	.513	.230	1.000							2.247	.836
AD05	.201	.181	.162	.322	1.000						2.088	.783
AD06	.055	.225	-.001	.040	-.098	1.000					2.589	.862
AD07	.189	.359	.176	.277	.153	.106	1.000				1.803	.824
AD08	.116	.173	.047	.251	.073	-.045	.230	1.000			2.364	.864
AD09	.354	.551	.310	.476	.279	.131	.264	.155	1.000		2.815	.631
AD10	.267	.330	.353	.292	.258	.080	.228	.121	.320	1.000	1.898	.809

Determinant of correlation matrix = .1572

Kaiser-Meyer-Olkin measure of sampling adequacy = .8234

Table 4.7

## Principal Component Analysis for the Adventure Domain

	Factor Loadings
AD01	.566
AD02	.761
AD03	.537
AD04	.714
AD05	.457 *
AD06	.167 *
AD07	.525
AD08	.330 *
AD09	.744
AD10	.596

\* Factor loading is below .50. Therefore, this item was dropped from the Adventure domain.

Table 4.8

## Principal Component Analysis for the Revised Adventure Domain

	Factor Loadings	Factor Score Coefficients	Residual
AD01	.579	.196	.815
AD02	.781	.264	.624
AD03	.569	.192	.822
AD04	.703	.237	.711
AD07	.520	.173	.854
AD09	.752	.254	.659
AD10	.600	.203	.800

Alpha Reliability = .751  
Eigenvalue = 2.962

Using the means and standard deviations from Table 4.6 and the factor score coefficients from Table 4.8 the level of Adventure was calculated for each student as follows:

$$\begin{aligned} \text{ADVEN} = & .196 (\text{AD01}-3.461)/.583 + \\ & .264 (\text{AD02}-2.607)/.676 + \\ & .192 (\text{AD03}-2.898)/.963 + \\ & .237 (\text{AD04}-2.247)/.836 + \\ & .176 (\text{AD07}-1.803)/.824 + \\ & .254 (\text{AD09}-2.815)/.631 + \\ & .203 (\text{AD10}-1.898)/.809 \end{aligned}$$

Figure 4.4 depicts the latent variable, Adventure (ADVEN). It shows the domain and the extent to which it reflects the observed variables AD01 to AD10.

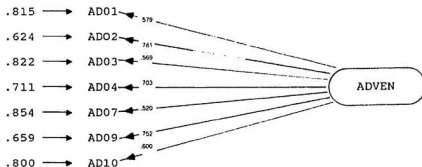


Figure 4.4. Measurement model: Adventure domain (ADVEN).



### Identity

The eleven items depicting Identity were subjected to principal component analysis using the correlations shown in Table 4.9. Items were eliminated from the identity domain until only those with both appropriate content and factor loadings above .50 remained. The following items were eliminated, ID02, ID03, ID05, ID06, ID09, ID10,; ID11 and the remaining items were again subjected to a principal component analysis (see Table 4.11). These items remained in the final version of the construct. However, the alpha reliability (.523) for this variable shows that it has low internal consistency and indicates that the questionnaire may not be a good measure of the construct.

Using the means and standard deviations from Table 4.9 and the factor score coefficients from Table 4.11 the level of Identity was calculated for each student as follows:

$$\begin{aligned} \text{IDENT} = & .321 (\text{ID01}-2.732)/.838 + \\ & .353 (\text{ID04}-1.668)/.715 + \\ & .422 (\text{ID07}-2.986)/.910 + \\ & .449 (\text{ID08}-2.874)/.925 \end{aligned}$$

The measurement model for the latent variable identity (IDENT) is depicted in Figure 4.5. It shows the domain and the extent to which it reflects the observed variables assigned to it.

Table 4.9  
Correlation Matrix for the Identity Domain

	ID01	ID02	ID03	ID04	ID05	ID06	ID07	ID08	ID09	ID10	ID11	$\bar{X}$	SD
ID01	1.000											2.732	.838
ID02	.105	1.000										2.744	1.116
ID03	.137	.002	1.000									3.003	.805
ID04	.147	.028	-.048	1.000								1.667	.715
ID05	.013	.021	.018	-.069	1.000							2.336	1.040
ID06	.193	-.024	-.067	.231	-.044	1.000						1.881	.639
ID07	.199	.121	.129	.149	.228	.036	1.000					2.985	.910
ID08	.159	.064	.035	.262	-.011	.046	.347	1.000				2.874	.925
ID09	.004	.044	-.121	.044	.006	.194	.029	.125	1.000			2.163	.911
ID10	.142	-.013	-.009	.201	-.127	.109	.000	.230	.118	1.000		2.212	.700
ID11	.050	-.080	.034	.005	-.031	.021	.056	.164	-.149	.177	1.000	3.183	.788

Determinant of correlation matrix = .4586

Kaiser-Meyer-Olkin measure of sampling adequacy = .5756

**Table 4.10****Principal Component Analysis for the Identity Domain**

	Factor Loadings
ID01	.528
ID02	.167 *
ID03	.090 *
ID04	.582
ID05	-.001 *
ID06	.411 *
ID07	.532
ID08	.683
ID09	.244 *
ID10	.495 *
ID11	.237 *

\* Factor loading is below .50. Therefore, this item was dropped from the Identity domain.

**Table 4.11****Principal Component Analysis for the Revised Identity Domain**

	Factor Loadings	Factor Score Coefficients	Residual
ID01	.528	.321	.849
ID04	.581	.353	.814
ID07	.694	.422	.720
ID08	.740	.449	.673

Alpha Reliability = .523  
Eigenvalue = 1.646

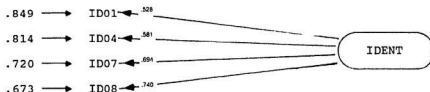


Figure 4.5. Measurement model: Identity domain (IDENT).

### Teacher

The eight items depicting the Teacher domain were subjected to principal component analysis using the correlations shown in Table 4.12. Item TD08 was eliminated because it showed poor discrimination in the analysis with a factor loading of less than .50. The remaining items were again subjected to analysis (see Table 4.4) and used as the final version for the Teacher domain. The alpha reliability of this variable is .797.

Using the means and standard deviations from Table 4.12 and the factor score coefficients from Table 4.14 the level of Teacher was calculated for each student as follows:

$$\begin{aligned}
 \text{TEACH} = & .218 (\text{TD01}-3.224)/.649 + \\
 & .186 (\text{TD02}-3.027)/.742 + \\
 & .217 (\text{TD03}-2.885)/.698 + \\
 & .184 (\text{TD04}-3.268)/.737 + \\
 & .235 (\text{TD05}-2.956)/.760 + \\
 & .229 (\text{TD06}-2.891)/.662 + \\
 & .206 (\text{TD07}-2.857)/.720
 \end{aligned}$$

**Table 4.12**

**Correlation Matrix for the Teacher Domain**

	TD01	DT02	TD03	TD04	TD05	TD06	TD07	TD08	$\bar{X}$	SD
TD01	1.000								3.224	.649
TD02	.422	1.000							3.027	.742
TD03	.360	.287	1.000						2.885	.698
TD04	.379	.242	.314	1.000					3.268	.737
TD05	.416	.361	.432	.291	1.000				2.956	.760
TD06	.377	.309	.448	.419	.464	1.000			2.891	.662
TD07	.328	.256	.404	.210	.510	.381	1.000		2.857	.720
TD08	-.038	.092	.108	-.032	.042	.103	.079	1.000	3.051	.952

Determinant of correlation matrix = .1678

Kaiser-Meyer-Olkin measure of sampling adequacy = .8400

**Table 4.13****Principal Component Analysis for the Teacher Domain**

	Factor Loadings
TD01	.691
TD02	.594
TD03	.696
TD04	.583
TD05	.751
TD06	.731
TD07	.660
TD08	.111 *

\* Factor loading is below .50. Therefore, this item was dropped from the Teacher domain.

**Table 4.14****Principal Component Analysis for the Revised Teacher Domain**

	Factor Loadings	Factor Score Coefficients	Residual
TD01	.696	.218	.718
TD02	.593	.186	.806
TD03	.694	.217	.720
TD04	.587	.184	.810
TD05	.752	.235	.659
TD06	.730	.229	.684
TD07	.659	.206	.752

Alpha Reliability = .797  
Eigenvalue = 3.194

Figure 4.6 depicts the measurement model for the latent variable, Teacher (TEACH). It shows the domain TEACH and the extent to which it reflects the observed variables TD01 to TD07.

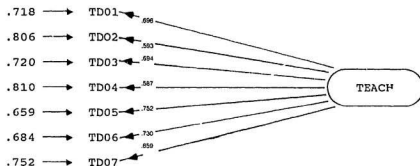


Figure 4.6. Measurement model: Teacher domain (TEACH).

#### The Quality of School Life: A Second Order Composite

The theoretical construct, QSL, was analyzed using each of the computed domains (Status, Opportunity, Adventure, Identity and Teacher), which are themselves latent variables, as items for the construct. The domain, Identity, showed poor discrimination in the item analysis. The factor loading was .267 (see Table 4.16), and the unweighted reliability for this domain was .523 (see Table 4.11). The other four domains show high internal consistency (reliability ranging from .705

Table 4.15

Correlation Matrix for the QSL Construct

	STAT	OPPORT	ADVEN	IDENT	TEACH	$\bar{X}$	SD
STAT	1.000					.348	.999
OPPORT	.548	1.000				.000	.995
ADVEN	.400	.525	1.000			.002	.991
IDENT	.140	.245	.046	1.000		.001	1.000
TEACH	.454	.552	.530	.085	1.000	.002	.999

Determinant of correlation matrix = .2738

Kaiser-Meyer-Olkin measure of sampling adequacy = .7721



**Table 4.16****Principal Component Analysis for the QSL Construct**

	Factor Loadings
OPPORT	.845
ADVEN	.758
STAT	.750
IDENT	.267 *
TEACH	.794

\* Factor loading is below .50. Therefore, this item was dropped from the QSL construct.

**Table 4.17****Principal Component Analysis for the Revised QSL Construct**

	Factor Loadings	Factor Score Coefficients	Residual
OPPORT	.836	.333	.548
ADVEN	.773	.308	.635
STAT	.751	.300	.660
TEACH	.804	.321	.594

Alpha Reliability = .804  
Eigenvalue = 2.508

to .819) and appear to be factorially homogeneous (factor loadings ranging from .750 to .845). It was decided to drop Identity from the QSL construct. Using the factor score coefficient from Table 4.17 and the standard deviations from Table 4.15, the QSL score for each student was computed as follows:

$$\begin{aligned} \text{QSL} = & .300 (\text{STAT} - .34811) / .9985 + \\ & .333 (\text{OPPORT} - .00039) / .9949 + \\ & .308 (\text{ADVENT} - .00206) / .9913 + \\ & .321 (\text{TEACH} - .00233) / .9995 \end{aligned}$$

The measurement model for the latent construct, QSL, is depicted in Figure 4.7. It shows the construct, QSL, and the extent to which it reflects the latent variables STAT, OPPORT, ADVEN and TEACH.

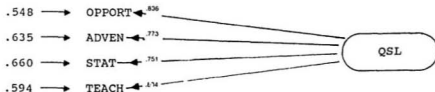


Figure 4.7. Measurement model: Quality of school life construct (QSL).

### **Student Well-Being**

Two measurements of student well-being were constructed, one dealing with Satisfaction, the other with Dissatisfaction. They were analyzed and a standardized score computed following the procedure used when analyzing the domains of the Quality of School Life.

#### Satisfaction

The seven items used to depict satisfaction with schooling were subjected to principal component analysis using the correlation matrix displayed in Table 4.18. As shown in Table 4.19 all items had a factor loading greater than .50 and were used in computing the construct. The alpha reliability for this construct was .864.

Using the factor score coefficients from Table 4.19 and the mean standard deviation shown in Table 4.18 the level of Satisfaction was measured for each student as follows:

$$\begin{aligned} \text{SATIS} = & .186 (\text{SA01}-2.723)/.627 + \\ & .190 (\text{SA02}-2.702)/.803 + \\ & .203 (\text{SA03}-2.624)/.705 + \\ & .210 (\text{SA04}-2.475)/.779 + \\ & .180 (\text{SA05}-2.578)/.733 + \\ & .193 (\text{SA06}-2.851)/.688 + \\ & .180 (\text{SA07}-2.990)/.769 \end{aligned}$$

**Table 4.18**

**Correlation Matrix for the Satisfaction Construct**

	SA01	SA02	SA03	SA04	SA05	SA06	SA07	$\bar{X}$	SD
SA01	1.000							2.723	.627
SA02	.423	1.000						2.702	.803
SA03	.486	.586	1.000					2.624	.705
SA04	.619	.520	.557	1.000				2.475	.779
SA05	.390	.449	.436	.530	1.000			2.578	.733
SA06	.432	.452	.564	.508	.411	1.000		2.851	.688
SA07	.410	.395	.431	.467	.451	.524	1.000	2.990	.769

Determinant of correlation matrix = .0620

Kaiser-Meyer-Olkin measure of sampling adequacy = .8837

Table 4.19

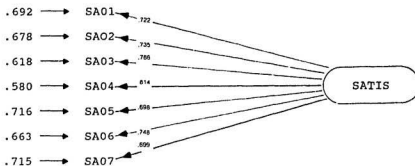
## Principal Component Analysis for the Satisfaction Construct

	Factor Loadings	Factor Score Coefficients	Residual
SA01	.722	.186	.692
SA02	.735	.190	.678
SA03	.786	.203	.618
SA04	.814	.210	.580
SA05	.698	.180	.716
SA06	.748	.193	.663
SA07	.699	.180	.715

Alpha Reliability = .864

Eigenvalue = 3.879

Figure 4.8 depicts the measurement model for the latent construct, satisfaction (SATIS). It shows the construct and the extent to which it reflects the observed variables SA01 to SA07.



**Figure 4.8. Measurement model: Satisfaction (SATIS).**

#### Dissatisfaction

The nine items depicting Dissatisfaction or negative affect were subjected to principal component analysis based on the correlations in Table 4.20. The final selection of items to be used in measuring the negative affect proceeded by eliminating items, DS01, DS02, and DS05 which showed factor loading of less than .50. The remaining items were analyzed again (see Table 4.22) and were used in the final version of the construct. The alpha reliability for this construct was found to be .699.

Using the factor score coefficients from the Table 4.22 the level of Dissatisfaction was measured for each student as follows:

**Table 4.20**

**Correlation Matrix for the Dissatisfaction Construct**

	DS01	DS02	DS03	DS04	DS05	DS06	DS07	DS08	DS09	$\bar{X}$	SD
DS01	1.000									2.348	.786
DS02	.059	1.000								1.622	.753
DS03	.104	.218	1.000							2.113	.766
DS04	.284	.120	.186	1.000						2.187	.843
DS05	.129	.242	.199	.220	1.000					2.000	.788
DS06	.136	.293	.340	.115	.148	1.000				2.298	.706
DS07	.122	.366	.435	.204	.170	.298	1.000			2.020	.754
DS08	.383	.131	.234	.448	.243	.359	.317	1.000		2.551	.843
DS09	.281	.185	.134	.293	.233	.117	.321	.413	1.000	1.708	.793

Determinant of correlation matrix = .1997

Kaiser-Meyer-Olkin measure of sampling adequacy = .7548

**Table 4.21****Principal Component Analysis for the Dissatisfaction Construct**

	Factor Loadings
DS01	.472 *
DS02	.486 *
DS03	.558
DS04	.569
DS05	.478 *
DS06	.548
DS07	.653
DS08	.724
DS09	.595

\* Factor loading is below .50. Therefore, this item was dropped from the Dissatisfaction construct.

**Table 4.22****Principal Component Analysis for the Revised Dissatisfaction Construct**

	Factor Loadings	Factor Score Coefficients	Residual
DS03	.602	.249	.798
DS04	.582	.240	.813
DS06	.573	.236	.820
DS07	.689	.284	.725
DS08	.752	.310	.659
DS09	.596	.246	.803

Alpha Reliability = .699  
Eigenvalue = 2.425



$$\begin{aligned}
 \text{DSATIS} = & .248 (\text{DS03}-2.113)/.766 + \\
 & .240 (\text{DS04}-2.187)/.843 + \\
 & .236 (\text{DS06}-2.298)/.707 + \\
 & .284 (\text{DS07}-2.020)/.754 + \\
 & .310 (\text{DS08}-2.551)/.843 + \\
 & .246 (\text{DS09}-2.708)/.793
 \end{aligned}$$

The measurement model for the latent construct, Dissatisfaction (DSATIS), is depicted in Figure 4.9. It shows the construct and the extent to which it reflects the observed variables assigned to it.

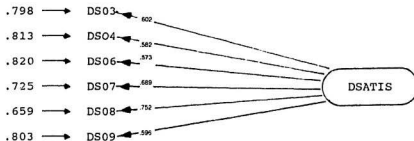


Figure 4.9. Measurement model: Dissatisfaction (DSATIS).

### **Socioeconomic Status**

Socioeconomic status is a two-dimensional concept which was measured using employment status as a proxy for economic status, and years of educational training as a proxy for social status. The five items used for SES were analyzed in the same way as the other constructs. Father's employment status (FEMPSTAT) showed a factor loading of .466, while the construct showed low internal consistency (alpha reliability = .033). This means that there was a low correlation between the items which composed SES. It may be that in the rural areas and in "one industry towns", the employment status of parents is a poor indicator of economic status, while in the urban areas where there exists a large variety of employment opportunities, the relationship between social status and economic status is stronger.

Although it may be argued that a measure may be valid without being reliable, it was decided to retain only the Parents' Education level (PARED = father's education and mother's education) instead of the original SES variables. This proved to be a more homogeneous construct. With only two items it had an acceptable reliability of .723. The concurrent validity between the original SES construct and the Parents' Education construct was .812. This was reported in Table 4.26 as concurrent validity. A high concurrent validity implies that either one can be substituted for the other. The

Table 4.23

Correlation Matrix for the SES Construct

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	FEMPSTAT	MEMPSTAT	FAED	MAED	TOTCHIL
FEMPSTAT	1.000				
MEMPSTAT	.083	1.000			
FAED	.340	.160	1.000		
MAED	.204	.333	.545	1.000	
TOTCHIL	-.116	-.263	-.329	-.410	1.000

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Determinant of correlaton matrix = .4397

Kaiser-Meyer-Olkin measure of sampling adequacy = .6825

Table 4.24

## Principal Component Analysis for SES

	Factor Loadings
FEMPSTAT	.466 *
MEMPSTAT	.516
FAED	.768
MAED	.815
TOTCHIL	.661

Alpha Reliability = .033

\* Factor loading is below .50. Therefore this item was dropped from the SES construct.

Table 4.25

## Principal Component Analysis for Parents' Education (PARED)

	Factor Loadings	Factor Score Coefficients	Residual
FAED	.879	.569	.477
MAED	.879	.569	.477

Alpha Reliability = .723  
Eigenvalue = 1.545

level of parents' education status was measured for each child as follows:

$$PARED = .569 (FAED-4.00)/1.89 + .569 (MAED-3.74)/1.63$$

Figure 4.10 depicts the measurement model for the latent construct, Parents' Education (PARED). It shows the construct and the extent to which it reflects the observed variables FAED and MAED.



Figure 4:10. Measurement model: Parents' education (PARED).

### Reliability and Validity

The basic theorem which underlies all formulas of reliability, and of empirical validity as well, may be stated as follows: In a population of individuals, the errors of measurement in different tests and in different forms of the same test are uncorrelated with one another and are uncorrelated with the true scores on all tests and forms. (Kruskall & Tanur, 1987, p. 771)

### Reliability

One concept of reliability is internal consistency. Cronbach's Coefficient Alpha is a general form of the Kuder-Richardson method of determining reliability (or internal consistency) of standardized tests (Borg & Gall, 1983, p. 285). This method is used to measure the internal consistency of tests which have multiple choice answers, such as the four-point scales used in the questionnaire for this study. The true reliabilities of the scales approximate or exceed the alpha reliability which is a lower bound estimate of the true reliability. From Table 4.26, we find that in all cases the reliability is acceptable, ranging from .71 to .86.

### Validity

Construct validity is the degree to which the questionnaire measures the construct postulated. Empirically this can be considered to be the extent to which the construct is a unitary trait, or "can be accounted for adequately by one underlying factor" (Williams, 1981, p. 22). Heise and Bohrnstedt (1970) developed a means of estimating the validity and invalidity of a construct by dividing the reliability variance into validity and invalidity using the equation: "reliability" = validity (squared) + invalidity. According to Williams and Batten (1981) when the variance in the construct is due to a single underlying factor the invalidity

becomes zero, although the validity can be "less than the square root of the reliability when the composite's variance is due to several underlying factors instead of a single factor" (p. 23). In this study each construct was developed assuming a single concept. The construct validity was computed as the square root of reliability. The validity of each construct was thus computed and listed in Table 4.26.

**Table 4.26**

**Reliability Coefficients and Validity Index for the Constructs**

Variable	N items	Alpha Reliability	Construct Validity	Concurrent Validity
Status	7	.705	.840	.733
Opportunity	8	.819	.905	.831
Adventure	7	.751	.867	.771
Identity	4	.523	.723	.171
Teacher	7	.797	.893	.795
QSL	4	.804	.897	.669
Satisfaction	7	.864	.930	_____ *
Dissatisfaction	6	.699	.836	(-.562) **
Education Status	2	.723	.850	.812 ***

\* This was used as a criterion for the QSL

\*\* This represents the discriminant validity between satisfaction and dissatisfaction.

\*\*\* The criterion used to measure this was SES.

### Concurrent Validity

"The concurrent validity of a test is determined by relating the test scores of a group of subjects to a criterion measure administered at the same time or within a short interval of time" (Borg & Gall, 1983, p. 279). It is used to determine how highly the test correlates with a criterion which is usually more difficult to measure. The theory guiding the development of the questionnaires in this study suggested that QSL and its domains should be correlated. When QSL was used as the criterion measure, the concurrent validity for each of the domains was found to range from .73 to .83. With Satisfaction used as the criterion measure, QSL had a concurrent validity of .67. With SES as the criterion, the latent construct, Parents' Education, had a concurrent validity of .812.

### Discriminant Validity

The theory guiding the development of the Satisfaction and Dissatisfaction scales suggests that they are independent dimensions of Well-being and should not have a high correlation. The correlation between Satisfaction and Dissatisfaction was found to be  $-.562$  which indicates that they are not orthogonal but share 32% of their variance. This suggests that it may not have been possible to separate satisfactorily, these two affects. "Test can be invalidated by too high correlations with other tests from which they were intended to differ" (Campbell & Fiske, 1959, p. 81). Further studies may be able to separate these two affects more satisfactorily.



## **CHAPTER V**

### **ANALYSIS OF THE DATA**

#### **Introduction**

This chapter reports the findings of the study. Before discussing the hypotheses described in Chapter 2, descriptive statistics for the variables used in the QSL model are presented. The findings of the study are then presented in three stages. First, the findings which deal with the relationships between the exogenous variables (sex, age, location and parents' education) and quality of school life (QSL) are presented. Secondly, the findings related to the factors influencing school achievement in mathematics and reading comprehension are presented. Thirdly, the findings related to the student well-being are presented. The chapter concludes with a summary of the findings.

#### **Descriptive Statistics**

The descriptive statistics for each of the variables used in the study are presented first. Although these statistics do not answer any of the questions in the study, they do provide some insight into the nature of the variables. Table 5.1 reports the mean, standard deviation and number of cases for each variable.

Table 5.1

Descriptive Statistics for the Variables used in the QSL Model

Variable		Mean	SD	Cases
LOCAT		1.54	.50	317
SEX		1.57	.50	317
AGE		190.29	6.15	311
PARED		3.87	1.82	291
MATH	**	10.56	2.88	298
READING	**	10.52	3.35	295
SATIS	*	50.00	10.00	269
DSATIS	*	50.00	10.00	289
QSL	*	50.00	10.00	283
OPPORT	*	50.00	10.00	288
ADVEN	*	50.00	10.00	291
STAT	*	50.00	10.00	293
TEACH	*	50.00	10.00	294

\* T-scores, standardized on present sample

\*\* CTBS grade level scores standardized on national sample

The mnemonics for the QSL model used in the above tables, and in subsequent tables have the following meanings: LOCAT = Location, (coded urban 1, rural 2), SEX = Sex (coded male 1, female 2), AGE = Age in months, PARED = Parents' Education (coding explained in Chapter 3), READING = Reading Comprehension, MATH = Mathematics Achievement, QSL = Quality of School Life, STAT = Status (a domain of QSL), OPPORT = Opportunity (a domain of QSL), (ADVEN = Adventure (a domain of QSL), TEACH = Teacher (a domain of QSL), SATIS = Satisfaction (a component of student Well-being), DSATIS = Dissatisfaction (a component of student Well-being).

In this study the urban students are coded "1" and the rural students are coded "2". Table 5.2 reports the descriptive statistics for the urban and rural students. A mean of 1.54 indicates that there were slightly more rural students (171) than urban students (146) in the sample. In the regression analyses reported later in this chapter, positive signs on the coefficients depicting the relationships between Location (LOCAT) and other variables indicate that the relationships are in "favour" of the rural students, while negative signs are in favour of the urban students.

For the variable SEX, the males are coded "1" and the females are coded "2". Table 5.3 reports the descriptive statistics for male and female students. The mean of 1.574 shows that there were more females (182) than males (135) in the sample and this ratio of females to males (shown in Table 5.2) is approximately the same in the rural schools (1.573) as in the urban schools (1.575). In the regression analyses that follow, positive signs on the coefficients depicting relationships between SEX and the other variables indicate that the relationships are in "favour" of the females, while negative signs are in favour of the males.

The students' age were measured in months. The average age was 190.3 months or 15 years, 10 months. The majority of students were 15 years of age, however the ages ranged from the youngest at 14 years, 5 months (173 months) to the oldest at 18 years, 1 month (217 months). Table 5.2 shows that there

Table 5.2

**Descriptive Statistics of the Urban and Rural Students for the Variables Used in the QSL Model**

Variable	Urban			Rural		
	Mean	SD	Cases	Mean	SD	Cases
LOCAT	1.000	.000	146	2.000	.000	171
SEX	1.575	.496	146	1.573	.496	171
AGE	190.507	6.732	144	190.102	5.617	167
PARED *	4.214	1.659	137	3.576	1.905	158
MATH **	11.142	2.896	137	10.064	2.781	161
READING **	11.535	3.279	136	9.660	3.180	159
SATIS *	50.263	9.762	122	49.784	10.219	147
DSATIS *	49.335	10.427	142	50.652	9.565	147
QSL *	50.258	9.948	141	49.752	10.087	142
OPPORT *	50.212	10.114	142	49.801	9.918	146
ADVEN *	49.407	9.834	142	50.576	10.153	149
STAT *	50.763	10.027	122	49.275	9.949	150
TEACH *	50.395	9.708	143	49.632	10.287	151

\* T-score, standardized on present sample

\*\* Score, standardized on national sample

Table 5.3

Descriptive Statistics of Males and Females for the Variables  
Used in the QSL Model

Variable	Males			Females		
	Mean	SD	Cases	Mean	SD	Cases
LOCAT	1.541	.500	135	1.538	.500	182
SEX	1.000	.000	135	2.000	.000	182
AGE	191.157	6.925	134	189.633	5.434	177
PARED *	4.081	1.719	124	3.718	1.886	167
READING **	10.306	3.384	130	10.696	3.316	165
MATH **	11.044	3.065	129	10.189	2.685	169
SATIS *	48.393	10.331	120	51.296	9.562	149
DSATIS *	50.018	9.571	126	49.995	10.353	163
QSL *	48.913	10.093	124	50.856	9.882	159
OPPORT *	49.949	10.103	125	50.046	9.951	163
ADVEN *	48.318	10.676	126	51.285	9.277	165
STAT *	49.559	10.009	128	50.344	10.005	165
TEACH *	49.081	9.486	127	50.704	10.347	167

\* T-score, standardized on present sample

\*\* Score, standardized on national sample

was not much difference between urban and rural students with respect to their average ages. However, Table 5.3 indicates that the average age for females was about two months less than for males.

Parents' education (PARED) is the independent variable with the greatest difference when comparing the means of the urban students (4.214) and the rural students (3.576) (see Table 5.2). This indicates that the parents of the urban students are generally better educated than the parents of the rural students. From the questionnaire (see Appendix A) we find that the average parent of rural students (3.576) has some high school education but has not completed high school. The average parent of urban students (4.214) has finished high school and has some post secondary education. Because the home environment has a large influence on achievement, especially in reading comprehension, this lower level of education for the rural parents may put the rural students at a disadvantage when compared to the urban students.

The Mathematics Achievement and Reading Comprehension variables are CTBS scores representing the grade level of the students. The urban students were reading at a higher grade level (11.54) than were their rural counterparts (9.66). This means that urban respondents had a reading comprehension which was almost two grade levels above their rural counterparts. The differences in mathematics achievement were not as great. However, the urban students at a grade level of 11.14 were

performing at more than one grade level above their rural counterparts who had an average grade level of 10.06.

The other two outcome variables, Satisfaction and Dissatisfaction were computed as standardized scores and transformed into T-scores, with a mean of 50 and a standard deviation of 10. From Table 5.2 it was observed that the urban students in the sample rated the outcome variable, Satisfaction more highly than did the rural students. The rural students also rated the outcome variable, Dissatisfaction, lower than the rural students. From Table 5.3 it was observed that the females in the sample rated Satisfaction more highly than did the males, although both groups rated Dissatisfaction about the same.

QSL and the latent variables, STAT, OPPORT, ADVEN and TEACH were also computed as standardized scores and transformed into T-scores, with a mean of 50 and a standard deviation of 10. From Table 5.3 it was observed that the females in the sample rated all of the latent variables and QSL more highly than did the males. Although there was only a small difference in rating of QSL by the urban and rural students in the sample; it was found that urban students rated the domains STAT, OPPORT, and TEACH more highly than did the rural students, while the rural students rated the domain ADVEN more highly than did the urban students (see Table 5.2). Further analysis of the relationship between exogenous

variables and the domains was not conducted in this study, but is suggested for a future study.

The regression analysis which follows was done in two parts. First, a regression analysis using the construct QSL was conducted. Secondly, a regression analysis using the disaggregated model for QSL was conducted to find out what effect each domain had on the outcome variables, Mathematics Achievement, Reading Comprehension, Satisfaction and Dissatisfaction.

#### **Effects of Background Variables on QSL**

Before estimating the full model described in this study, the relationships between the intervening variable (QSL) and the exogenous or background variables (Age, Sex, Location and Parents' Education) were studied.

#### **Hypotheses related to QSL**

1. There will be a significant relationship between location and student perception of QSL, which will favour urban students. (Reject)
2. There will be no significant relationship between Sex and student perception of QSL. (Accept)
3. There will be a significant negative relationship between Age and student perception of QSL. (Reject)



4. There will be no relationship between SES and student perception of QSL. (Accept)

From the correlation coefficients shown in Table 5.4, and the direct effects (beta coefficients) shown in Tables 5.5 and 5.6 none of the relationships between the exogenous variables and the intervening variable was found to be statistically significant. This confirms hypotheses 2 and 4. There was no difference between males and females in their perception of QSL. Also, there was no difference in the level of parents' education (SES) and student perception of QSL. This last finding is not surprising because the QSL instrument was designed to measure variables within the school which affect student perception of schooling.

Although the relationship between Location and QSL was in the direction predicted in hypothesis 1, neither the correlations nor the beta coefficients were significant. Therefore, the hypothesis was rejected and it was concluded that there was no difference between urban and rural students in their perception of QSL. For hypothesis 3, the direction of the product-moment coefficient (.04) and the beta coefficient (.065) was the inverse of the direction predicted in hypothesis 3. It was not significant, however, and the hypothesis was rejected.

Table 5.4  
Zero-order Correlations between the Variables in the QSL Model

	L	SE	A	P	M	R	SA	D	O	C	A	S	T
L LOCAT	1.000												
SE SEX	-.002	1.000											
	(-.484)												
A AGE	-.032	-.121	1.000										
	(.283)	(.016)											
P PARED	-.181	-.096	-.159	1.000									
	(.001)	(.044)	(.002)										
M MATH	-.176	-.139	-.264	.272	1.000								
	(.001)	(.007)	(.000)	(.000)									
R READ	-.261	-.054	-.227	.366	.610	1.000							
	(.000)	(.168)	(.000)	(.000)	(.000)								
SA SATIS	-.022	.134	.010	.057	.016	.113	1.000						
	(.348)	(.009)	(.433)	(.154)	(.388)	(.049)							
D DSATIS	.063	-.001	-.139	-.062	-.045	-.043	-.562	1.000					
	(.131)	(.492)	(.007)	(.137)	(.214)	(.221)	(.000)						
Q QSL	-.024	.092	.035	.085	.162	.224	.669	-.556	1.000				
	(.335)	(.052)	(.266)	(.062)	(.000)	(.000)	(.000)	(.000)					
O OPPORT	-.020	.005	-.003	.138	.214	.254	.488	-.435	.831	1.000			
	(.364)	(.468)	(.478)	(.007)	(.000)	(.000)	(.000)	(.000)	(.000)				
A ADVEN	.056	.141	.030	.017	.038	.073	.694	-.542	.771	.525	1.000		
	(.101)	(.008)	(.297)	(.380)	(.251)	(.098)	(.000)	(.000)	(.000)	(.000)			
S STAT	-.072	.038	-.003	.159	.276	.276	.437	-.348	.669	.488	.694	1.000	
	(.348)	(.009)	(.433)	(.154)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)		
T TEACH	-.037	.078	.072	.003	.060	.145	.552	-.468	.795	-.552	.530	.454	1.000
	(.256)	(.084)	(.100)	(.032)	(.142)	(.005)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	

The significance level is given in brackets directly below the coefficient.

Table 5.5

Regression Analysis Results for the Exogenous Variables on QSL

Independent Variables	QSL				
	B	SE B	Beta	t	p.
LOCAT	-.044	1.080	-.002	-.041	.967
SEX	1.094	1.084	.110	1.931	.054
AGE	.101	.088	.066	1.141	.255
PARED	1.028	.559	.107	1.838	.067
Multiple R = .147					
$R^2 = .022$					

p. = probability

Table 5.6

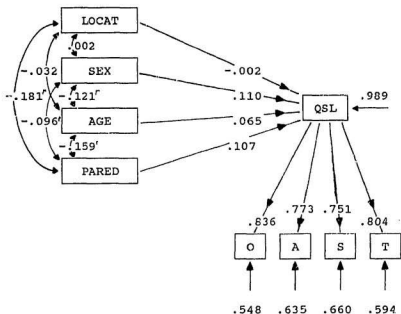
Correlations, Direct Effects (beta) and T-values for the Effects of the Exogenous Variables on the Intervening Variable (QSL)

Intervening Variable	Exogeneous Variables	Correlation (r)	Direct Effect	t-value <sup>A</sup>
QSL				
	LOCAT	-.024	-.002	-.041
	SEX	.092	.110	1.931
	AGE	.035	.065	1.141
	PARED	.086	.107	1.838

Multiple R = .147

R<sup>2</sup> = .022

<sup>A</sup> t ≥ 2.0 is significant at the p ≤ .05 level. The t-value is for the direct effects only.



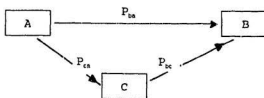
' Correlation (r) is significant at, at least the  $p \leq .05$  level.

**Figure 5.1.** Path model for quality of school life (QSL).

O, A, S and T represent the variables composing the QSL construct. The number above each variable is the the factor load and the number below is the residual. (See Figure 4.7)

The construct (QSL) was empirically independent of the exogenous variables. These null relationships are depicted in the path model presented in Figure 5.1 and are shown in detail in Table 5.6. In the model described by Figure 5.1 there are no indirect effects between the exogenous variables and QSL, because there are no intervening variables.

One may examine direct and indirect effects in path models. For example, one may find an indirect effect between a dependent variable and an independent variable through an intervening variable. In path analysis the path coefficient (beta) equals the product-moment coefficient ( $r$ ) when one variable is viewed as dependent on a single cause (independent variable). In the following example, if variable A is viewed as the single cause of B, then the path coefficient ( $P_{ba}$ ) is equal to the product-moment coefficient ( $r_{ab}$ ).



However, in the example given, variable A is not the single cause of B, and the path coefficient represents the strength of the relationship between two variables with the effects of the other variable removed (or partialled out). The "**direct**" effect of B on A is the path coefficient ( $P_{ba}$ ). The path coefficient is usually less than the product-moment for the same variables. It must be noted here that the path coefficient is a lower limit estimate. When there are zero correlations between independent variables, the path coefficients and the zero-order relationships (correlations) are the same.

The "**indirect**" effect is the effect which variable A has on variable B through the intervening variable C. The indirect effect is measured as a product of the path coefficients  $P_{ca}$  and  $P_{bc}$ . The **total** effect between A and B is the sum of the direct effect and the indirect effect between these two variables.

### **Factors Influencing Achievement**

Although QSL research, to date, has focused on student Satisfaction and Dissatisfaction as outcomes of schooling, one of the purposes of this study was to find out if the characteristics of schooling which relate to student well-being also relate to student achievement.

In this section, path analyses were conducted using the results of the regression analyses. Table 5.9 reports the direct effects (beta) between the exogenous variables and the outcomes of schooling. It also reports the indirect effects between the dependent variables and the exogenous variables through the intervening variable (QSL).

#### Hypotheses Related to Location

5a. There will be a significant relationship between Location and Mathematics Achievement which will favour the urban students. (Accept)

5b. There will be a significant relationship between Location and Reading Comprehension which will favour the urban students. (Accept)

The relationships between location and both of the achievement outcomes were found to be significant. In both cases it favoured the urban students, thus confirming hypotheses 5a and 5b. The urban students outperformed the rural students in Mathematics and Reading Comprehension. Table 5.2 shows that, in this study, the urban students were performing at two grade levels above the rural students in Reading Comprehension and more than one grade level above them in Mathematics. From the results reported in Table 5.9 and the path model in Figure 5.2, there appears to be a greater



**Table 5.7****Regression Analysis Results for the QSL Model on Mathematics Achievement**

Independent Variables	Mathematics				
	B	SE B	Beta	t	p.
LOCAT	-.863	.299	-.150	-2.885	.004
SEX	-.990	.302	-.170	-3.281	.001
AGE	-.125	.025	-.268	-5.119	.000
PARED	.502	.156	.172	3.228	.001
QSL	.051	.015	.169	3.277	.001
Multiple R = .441					
$R^2 = .195$					

**Table 5.8****Regression Analysis Results for the QSL Model on Reading Comprehension**

Independent Variables	Reading Comprehension				
	B	SE B	Beta	t	p.
LOCAT	-1.409	.336	-.210	-4.119	.000
SEX	.270	.339	.040	.798	.426
AGE	-.104	.028	-.190	-3.770	.002
PARED	.970	.175	.285	5.550	.000
QSL	.070	.018	.198	3.983	.000
Multiple R = .499					
$R^2 = .249$					

Table 5.9

Correlations, Direct Effects (beta), Indirect Effects, Total Effects and t-values for the Effects of the Independent Variables on the Achievement Outcomes

Outcome Variables	Independent Variables	Correlation (r)	Direct Effect	Indirect Effect	Total Effect	t-value <sup>a</sup>
Mathematics						
	LOCAT	-.176	-.150	.000	-.150	-2.885
	SEX	-.139	-.170	.019	-.151	-3.281
	AGE	-.254	-.268	.011	-.257	-5.119
	PARED	.272	.172	.018	.190	3.228
	QSL	.162	.169	—	.169	3.277

Multiple R = .441

R<sup>2</sup> = .195

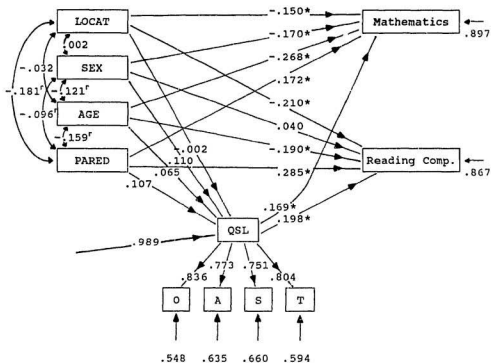
#### Reading Comprehension

	LOCAT	-.261	-.210	.000	-.210	-4.199
	SEX	.054	.040	.022	.062	.798
	AGE	-.227	-.190	.013	-.177	-3.770
	PARED	.366	.285	.021	.306	5.550
	QSL	.224	.198	—	.198	3.983

Multiple R = .499

R<sup>2</sup> = .249

<sup>a</sup> t-value  $\geq 2.0$  is significant at the  $p \leq .05$  level. The t-value is for the direct effects only.



<sup>f</sup> Correlation is significant at, at least the  $p \leq .05$  level.

\* Direct effect (beta) is significant at, at least, the  $p \leq .05$  level.

Figure 5.2. Path model for the achievement outcomes.

difference between the two groups in reading comprehension than in mathematics achievement. Because a student's reading comprehension may influence all of their academic subjects it is probable that this urban-rural difference will be found in most all of the subjects areas.

#### Hypotheses Related to Sex

6a. The relationship between Sex and Mathematics Achievement will be in favour of males. (Accept)

6b. The relationship between Sex and Reading Comprehension will be in favour of females. (Reject)

From Table 5.9 and the path model presented in Figure 5.2, it was determined that the Sex difference favoured males in Mathematics Achievement, which confirms hypothesis 6a. This is consistent with other studies done on the high school level (Boone, 1984; Fennema, 1974; Kavanagh, 1987). Whitt (1989) found the opposite to be true in the junior high grades, while Bulcock and Beebe (1988) found no significant difference in the elementary grades. Although, in the present study the direct effect between Sex and Mathematics Achievement is significant, the indirect effect through the intervening variable is small and does not contribute significantly to the total effect.

Although the Sex difference in Reading Comprehension was in the direction hypothesized, it was not found to be

statistically significant. Thus hypothesis 6b must be rejected.

#### Hypotheses Related to Age

7a. There will be a significant negative relationship between Age and Mathematics Achievement. (Accept)

7b. There will be a significant negative relationship between Age and Reading Comprehension. (Accept)

This study has found a significant, negative relationship between students' age and their achievement. The correlation with Mathematics Achievement is  $-.264$ , and the path analysis shows a direct effect of  $-.268$ , indirect effect of  $.011$  and a total effect of  $-.257$ . The correlation with Reading Comprehension was  $-.227$ . The path analysis shows a direct effect of  $-.190$ , indirect effect of  $.013$  and a total effect of  $-.177$ . Both paths are statistically significant, therefore, hypotheses 7a and 7b were accepted.

The relationship between Mathematics and Age appeared to be stronger than between Reading Comprehension and Age. The age difference in achievement is sometimes explained by the fact that the older students include more repeaters.

### Hypotheses Related to Parents' Education

8a. There will be a significant positive relationship between SES and Mathematics Achievement. (Accept)

8b. There will be a significant positive relationship between SES and Reading Comprehension. (Accept)

Parents' education level (PARED) was used as a proxy for social status. It may be argued that parents with a higher level of education perceive education to be more important, and encourage their children to pursue an education. From the findings in Table 5.9, depicted also in Figure 5.2, it can be seen that the level of Parents' Education correlated with Mathematics Achievement and with Reading Comprehension; therefore hypotheses 8a and 8b were accepted. It is worth noting that there was a higher correlation between Reading Comprehension and Parents' Education than between Mathematics Achievement and Parents' Education (.366 compared to .272). This may be a result of the more educated parents providing better reading opportunities for their children. It may also indicate that, for high school students, the school has more influence in Mathematics Achievement than in Reading Comprehension.

Hypotheses Related to QSL

9a. There will be a significant positive relationship between student perception of QSL and Mathematics Achievement.

(Accept)

9b. There will be a significant positive relationship between student perception of QSL and Reading Comprehension.

(Accept)

9c. There will be a stronger relationship between student perception of QSL and Mathematics Achievement, than between their perception of QSL and Reading Comprehension.

(Reject)

The findings reported in Table 5.9 confirm hypothesis 9a and 9b. The direct effects (beta) between the intervening variable (QSL) and achievement variables were statistically significant for the Grade 10 students. There were no indirect effects between the achievement variables and the intervening variable, (QSL). From the findings shown in Table 5.9, hypothesis 9c which states that correlation between QSL and Mathematics will be higher than between QSL and Reading Comprehension was rejected, the difference being in the opposite direction (the total effect being .169 for Mathematics and .198 for Reading). Bulcock and Beebe (1988) found that at the elementary level QSL did not contribute significantly to achievement. It may be that the students'

perceptions of QSL become a more important contributor to achievement as they become older.

This finding is significant because it shows that QSL is a measurable variable which can be used in educational research related to student achievement. It may be equally interesting for educators to find out which of the domains influence achievement the most. To find out which of the quality domains contribute most to achievement we look at the disaggregated model of the QSL construct (Table 5.12 and Figure 5.3). It shows that only two of the domains (Status and Opportunity) had a significant direct effect on both achievement outcomes. Although the relationships between Adventure and Teacher with achievement outcomes were not statistically significant, three of the relationships were found to be negative suggesting the need for further study.

### **Factors Influencing Well-being**

The section which follows reports the findings concerning factors hypothesized to influence Satisfaction and Dissatisfaction, the two components of Student Well-being. First to be presented are the findings for the exogenous variables-Location, Sex, Age and Parents' Education. This will be followed by the findings for QSL and its domains. The data are presented in Table 5.15 and Figure 5.4.



**Table 5.10**

**Regression Analysis Results for the Disaggregated QSL  
Model on Mathematics Achievement**

Independent Variables	Mathematics				
	B	SE B	Beta	t	p.
OPPORT	.055	.022	.183	2.505	.013
ADVEN	-.033	.020	-.110	-1.637	.103
STAT	.080	.020	.267	4.042	.000
TEACH	-.031	.021	-.103	-1.486	.138
Multiple R = .320					
$R^2 = .102$					

**Table 5.11**

**Regression Analysis Results for the Disaggregated QSL  
Model on Reading Comprehension**

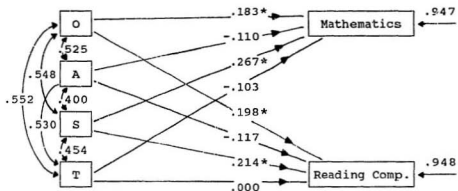
Independent Variables	Reading Comprehension				
	B	SE B	Beta	t	p.
OPPORT	.069	.026	.198	2.710	.007
ADVEN	-.041	.024	-.117	-1.738	.083
STAT	.075	.023	.214	3.239	.001
TEACH	.000	.024	.001	.007	.995
Multiple R = .318					
$R^2 = .101$					

Table 5.12

Correlations, Direct Effects (beta) and t-values for the Effects of the Disaggregated QSL Model on the Achievement Outcomes of Schooling.

Dependent Variables	Domains of QSL	Correlation (r)	Beta	t-value <sup>A</sup>
Mathematics				
	OPPORT	.214	.183	2.505
	ADVEN	.038	-.110	-1.637
	STAT	.276	.267	4.042
	TEACH	.060	-.103	-1.486
Multiple R = .320				
R <sup>2</sup> = .102				
Reading Comprehension				
	OPPORT	.254	.198	2.710
	ADVEN	.073	-.117	-1.738
	STAT	.276	.214	3.239
	TEACH	.145	.000	.007
Multiple R = .318				
R <sup>2</sup> = .101				

<sup>A</sup>t  $\geq 2.0$  is significant at the  $p \leq .05$  level.  
The t- value is for the direct effects only.



\* Direct effect (beta) is significant at, at least the  $p \leq .05$  level.

Figure 5:3. Path model for the disaggregated QSL model and the achievement outcomes.

Hypotheses Related to Location

10a. There will be a significant relationship between Location and Satisfaction, which will favour the urban students. (Reject)

10b. There will be a significant relationship between Location and Dissatisfaction, which will favour the rural students. (Reject)

Both urban and rural students expressed approximately the same level of Satisfaction with schooling and the same level of Dissatisfaction with schooling. Using the results shown in Table 5:15 it was found that the relationship between Satisfaction and Location was in the direction hypothesized, while the relationship between Dissatisfaction and Location was the reverse of the direction hypothesized. However, they were not statistically significant and the hypotheses were rejected.

Hypotheses Related to Sex

11a. There will be a significant relationship between Sex and Satisfaction, which will favour females. (Accept)

11b. There will be no significant relationship between Sex and Dissatisfaction with schooling. (Accept)

**Table 5.13****Regression Analysis Results for the QSL Model on Satisfaction**

Independent Variables	Satisfaction				
	B	SE B	Beta	t	p.
LOCAT	-.092	.789	-.005	-.117	.907
SEX	1.364	.796	.073	1.713	.088
AGE	-.006	.065	-.004	-.096	.924
PARED	.054	.411	.006	.131	.896
QSL	.645	.041	.662	15.595	.000

Multiple R = .673

 $R^2 = .453$ **Table 5.14****Regression Analysis Results for the QSL Model on Dissatisfaction**

Independent Variables	Dissatisfaction				
	B	SE B	Beta	t	p.
LOCAT	.808	.907	.042	.891	.374
SEX	.642	.916	.033	.701	.484
AGE	-.182	.074	-.117	-2.454	.015
PARED	-.211	.472	-.022	-.447	.656
QSL	-.558	.048	-.552	-11.734	.000

Multiple R = .572

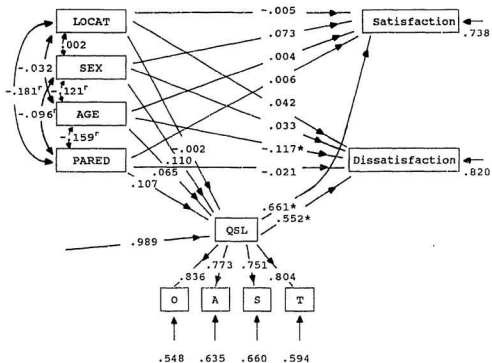
 $R^2 = .327$

Table 5.15

Correlations, Direct Effects (beta), Indirect Effects, Total Effects and t-values for the Effects of the Independent Variables on Well-being

Outcome Variables	Independent Variables	Correlation (r)	Direct Effect	Indirect Effect	Total Effect	t-value <sup>a</sup>
Satisfaction						
	LOCAT	-.022	-.005	-.002	-.007	-.117
	SEX	.134	.073	.073	.146	1.713
	AGE	.010	-.004	.043	.039	-.096
	PARED	-.057	.006	.071	.077	.131
	QSL	.669	.661	—	.661	15.595
Multiple R = .673						
R <sup>2</sup> = .453						
Dissatisfaction						
	LOCAT	.063	.042	.001	.043	.891
	SEX	-.001	.033	-.061	-.028	.701
	AGE	.139	-.117	-.036	-.153	-2.454
	PARED	-.062	-.022	-.059	-.081	-.447
	QSL	-.556	-.552	—	-.552	-11.734
Multiple R = .572						
R <sup>2</sup> = .327						

<sup>a</sup> t  $\geq$  2.0 is significant at the p  $\leq$  .05 level. The t-value is for the direct effects only.



<sup>\*</sup> Correlation is significant at, at least the  $p \leq .05$  level.

\* The Direct effects (beta) is significant at, at least the  $p \leq .05$  level.

**Figure 5.4.** Path model for student well-being.

The findings relative to the sex differences in Satisfaction favours females, which is similar to findings in other studies (Colton & White, 1985; Bulcock & Beebe, 1988). The direct effect ( $\beta = .073$ ,  $t = 1.7$ ) was not significant. However, the indirect effect ( $\beta = .073$ ) through the intervening variable (QSL) was as large as the direct effect, which gave a total effect of  $\beta = .147$ . Although the significance of the total effect was not measured directly, it was greater than other direct effects which were significant; therefore, it was assumed to be significant. This would confirm hypothesis 11a.

The relationship (reported in Table 5.15) between sex and Dissatisfaction was not significant; therefore hypothesis 11b was rejected and it was concluded that there was no sex difference in student Dissatisfaction with schooling.

#### Hypotheses Related to Age

12a. There will be a significant negative relationship between Age and Satisfaction with schooling. (Reject)

12b. There will be a significant positive relationship between Age and Dissatisfaction with schooling. (Accept)

According to Table 5.15 and the path model in Figure 5.5 the findings did not support hypothesis 12a. Therefore, it was rejected. Student Satisfaction with schooling was not related to student age. However, the relationship between



student Dissatisfaction with schooling and student age (Beta =  $-.117$ ,  $t = -2.5$ ) was found to be significant, which confirms hypothesis 12b. This means that the older students were more Dissatisfied with schooling.

#### Hypotheses Related to Parents' Education

13a. There will be a significant positive relationship between SES and Satisfaction with schooling. (Reject)

13b. There will be a significant negative relationship between SES and Dissatisfaction with schooling. (Reject)

Although parents' level of education was found to have a statistically significant influence in student achievement, it was not a predictor of student Satisfaction or Dissatisfaction. Table 5.15 and the path model in Figure 5:4 shows that the beta coefficient between Parents' Education and Satisfaction was not significant; therefore, hypothesis 13a was rejected. Although the direction of the correlation was as predicted, hypothesis 13b was also rejected, because the relationship between Parents' Education and Dissatisfaction was not significant.

### Hypotheses Related to QSL

14a. There will be a significant positive relationship between student perception of QSL and their Satisfaction with schooling. (Accept)

14b. There will be a negative relationship between student perception of QSL and their Dissatisfaction with schooling. (Accept)

One of the strongest relationships found in the study was between QSL and Satisfaction, which confirms hypothesis 14a. From the results reported in Table 5.15 it was found that QSL was the single most powerful predictor of Satisfaction. The direct effect was significant (beta coefficient = .661, t-value = 15.6) and it accounts for at least 43.7% of the variance in student Satisfaction with schooling.

The direct effect of QSL on Dissatisfaction with schooling was negative and almost as large as the effect of QSL on Satisfaction (beta = -.552, t-value = -11.7). This confirms hypothesis 14b which states that there will be a negative relation between the student's perception of QSL and their Dissatisfaction with schooling.

Table 5.18 shows the results of a multiple regression of the disaggregated model. From it and the results shown in the path model in Figure 5.5, it was possible to determine which

**Table 5.16****Regression Analysis Results for the Disaggregated QSL Model on Satisfaction**

Independent Variables	Satisfaction				
	B	SE B	Beta	t	p.
OPPORT	.040	.050	.042	.799	.425
ADVEN	.500	.046	.520	10.822	.000
STAT	.110	.045	.115	2.442	.015
TEACH	.192	.047	.201	4.052	.000
Multiple R = .736					
$R^2 = .542$					

**Table 5.17****Regression Analysis Results for the Disaggregated QSL Model on Dissatisfaction**

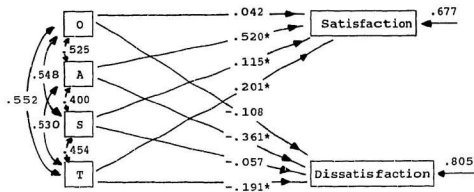
Independent Variables	Dissatisfaction				
	B	SE B	Beta	t	p.
OPPORT	-.109	.062	-.108	-1.749	.081
ADVEN	-.360	.057	-.361	-6.319	.000
STAT	-.057	.056	-.057	-1.024	.307
TEACH	-.189	.059	-.191	-3.235	.001
Multiple R = .593					
$R^2 = .352$					

Table 5.18

Correlations, Direct Effects (beta) and t-values for the Effects of the Disaggregated QSL Model on Student Well-Being.

Dependent Variables	Domains of QSL	Correlation (r)	Beta	t-value <sup>A</sup>
Satisfaction				
	OPPORT	.488	.042	.799
	ADVEN	.694	.520	10.822
	STAT	.437	.115	2.442
	TEACH	.552	.201	4.052
Multiple R = .736				
R <sup>2</sup> = .542				
Dissatisfaction				
	OPPORT	-.435	-.108	-1.749
	ADVEN	-.542	-.361	-6.319
	STAT	-.348	-.057	-1.024
	TEACH	-.468	-.191	-3.235
Multiple R = .593				
R <sup>2</sup> = .352				

<sup>A</sup>  $t \geq 2.0$  is significant at the  $p \leq .05$  level.  
The t-value is for the direct effects only.



\* Direct effect (beta) is significant at, at least the  $p \leq .05$  level.

Figure 5.5. Path model for the disaggregated QSL model and well-being.

of the components of QSL make the greatest difference in student well-being.

All of the domains of schooling correlated highly with Satisfaction. The correlations ranged from .437 for Status to .694 for Adventure. When controlling for the effects of the other domains, however, only three components of QSL (Status, Adventure and Teacher) had direct effects which were statistically significant. Two of them (Adventure and Teacher) accounted for most of the variance.

All of the domains of schooling also correlate highly but negatively with Dissatisfaction. Correlations range from -.348 for Status to -.542 for Adventure. When controlling for the effects of the other domains only two domains (Adventure and Teacher) were statistically significant. They accounted for most of the variance in Dissatisfaction.

### **Summary of the Findings**

The findings of this chapter which relate to each independent variable (Location, Sex, Age, Parents' Education and QSL) are grouped together and summarized in this section.

#### Effects of Location

The relationship between Location and QSL was not statistically significant. Although the relationships between Location and each of the four domains of QSL were not examined

for statistical significance, yet in the descriptive statistics two domains were more highly rated by urban students and two others more highly rated by rural students suggesting the need for further studies.

The relationships between Location and each of the dimensions of Well-being, namely Satisfaction and Dissatisfaction were not significant. However, the relationships between the achievement outcomes and Location were significant. The urban students were two grade levels above the rural students in Mathematics and one grade above them in Reading Comprehension.

#### Sex Differences

In this study the student's perception of QSL was not sex dependent. Both sexes rated QSL approximately the same. The relationship between Sex and Mathematics Achievement favoured males. The male students achieved higher scores in Mathematics than did the female students. The relationship between Sex and Reading Comprehension was not statistically significant. Both males and females scored approximately the same in Reading. The relationship between Sex and Dissatisfaction was not statistically significant; however, the females did rate Satisfaction with school more highly than did the males.

### Effects of Age

The student's perception of QSL was not age dependent. Within the study, students of all ages rated QSL approximately the same. Both of the achievement outcomes (Mathematics and Reading Comprehension) were influenced by age. In each case the relationship was negative indicating that the older students achieved lower scores in Mathematics and Reading Comprehension than did the younger students.

The student rating for the outcome satisfaction was not age dependent; however, there was a significant, positive relationship between age and Dissatisfaction. The older students expressed greater Dissatisfaction with schooling than did the younger students.

### Effects of Parents' Education

The level of parents' education did not have any significant relationship to students' perception of the quality of schooling; nor did it have a significant relationship to Satisfaction or Dissatisfaction. It did have significant positive relationships with the achievement outcomes, both Mathematics and Reading Comprehension. The students whose parents had a high level of education achieved higher scores in Mathematics and Reading Comprehension than did students whose parents had a lower level of education.



### Effects of QSL

None of the correlations between QSL with the exogenous variables was statistically significant. This means that it was an empirically independent variable. The relationship between QSL and each of the outcome variables was found to be significant. It may be concluded that the students' perception of the quality domains of schooling is related to their achievement at the high school level. The strongest relationship found in the QSL model existed between QSL and Satisfaction. QSL is a powerful predictor of satisfaction in that it explains at least 43.7% of the variance in Satisfaction.

A path analysis of the disaggregated QSL model showed that the dimensions of schooling which influence achievement the most are not the same ones which influenced Satisfaction or Dissatisfaction the most. The domains Opportunity and Status had a greater direct effect on the achievement outcomes than did the domains, Teacher and Adventure, while the opposite was true on Satisfaction and Dissatisfaction. The domains Teacher and Adventure explained most of the variance in Satisfaction and Dissatisfaction, while the direct effects of the domains Opportunity and Status were not significant.

## **CHAPTER 6**

### **SUMMARY AND CONCLUSIONS**

#### **Introduction**

This chapter presents a synopsis of the study; reports the basic conclusions reached in the study and offers some recommendations for further study.

#### **Problems and Procedures**

This study examines students' perceptions of the quality of their school lives and addresses four broad questions. First, are there differences between schools in terms of aggregate student rating of their Quality of School Life? Secondly, how responsive are the students' perceptions of QSL to the exogenous variables Location, Sex, Age and Parents' Education? Third, how responsive is high school achievement in Mathematics and Reading to students' perceptions of QSL? Finally, how responsive is student satisfaction or student well-being to their perceptions of QSL.

The concepts of QSL and the domains of QSL were derived from the Williams and Batten (1981) QSL model. Williams and Batten (1981) based their instrument on the social expectations of schooling model formulated by Spady and Mitchell (1979). This study extends the Williams QSL model in two ways. First, following a revision of Williams'

instrument it verifies the quality of the QSL measures at the senior high school level through principal component analysis. Secondly it examines relationships between QSL with student satisfaction as well as QSL with achievement in Mathematics and Reading.

Data for this study was taken from The Quality of School Life Project, a project sponsored by the Department of the Secretary of State and conducted by a group of researchers at Memorial University of Newfoundland. The sample was taken from the population of grade 10 students in the province during March, 1986. With 62.9% of the students returning the signed parental consent forms the sample was not a strong representation of the population.

More than ten regression analyses were conducted to examine the hypothesized relationships. Finally path analyses using the results of the regression analyses was used to estimate the direct effects, indirect effects and total effects in the hypothesized relationships.

### **Summary of the Findings**

The findings of the study are summarized below in four sections. The first section deals with the effects of the exogenous or background variables on QSL, the second section deals with QSL and its domains as variables intervening between achievement and the background variables, the third

with QSL and its domains as variables, while the fourth section deals with the effects of the background variables on Achievement and on Well-being.

#### Effects of Background Variables on QSL

Quality of School Life comprising four domains is a subjective measure, based on student perception. In the present study the effects of Sex, Age, Location and Parents' Education on QSL were analyzed using multiple correlation. It was found that not one of the four contributed significantly to QSL.

#### QSL as an Intervening Variable for Achievement

Academic achievement was found to be responsive to student perceptions of QSL. The relationship between QSL and achievement was generally comparable in size to the relationship between achievement and the background variables, Location, Sex, Age and Parents' Education. However, it was found that the background variables did not have equal effect on both of the achievement variables. The variables Age and Sex had greater effect on Mathematics Achievement than on Reading Comprehension. The other three variables, Location, Parents' Education and QSL had greater effects on Reading Comprehension than on Mathematics Achievement. However, QSL

was found to be a more consistent predictor of achievement for both achievement outcomes in that there is less difference in the size of the relationships between QSL and the outcome variables than the relationships between the background variables and the achievement outcomes (see Table 5.9).

From a regression analysis of the disaggregated QSL model on the achievement variables, it was found that only two of the domains of schooling (Status and Opportunity) had significant positive relationships with the achievement variables. Negative relationships between the other two domains (Teacher and Adventure) with the achievement variables were found although they were not statistically significant.

Research by Bulcock and Beebe (1988) found that achievement did not respond significantly to QSL in the elementary schools studied and suggested that there may be a positive lagged effect which emerges in later grades (cf. p. 10). The present study at the high school level found that achievement was responsive to QSL, and in particular, to two of its domains namely Status and Opportunity.

#### QSL as an Intervening Variable for Well-being

The subjective rating of students' perception of schooling (QSL) was found to be a much better predictor of their Satisfaction with schooling, than were the objective exogenous variables, Location, Sex, Age and Parents'

Education. The direct effect of QSL ( $\beta = .661$ ) accounted for at least 43.7% of the variance in Satisfaction. To find out which of the components of QSL contributed most to Satisfaction, a regression analysis was conducted on a disaggregated QSL model. All four domains correlated highly with Satisfaction, the correlations ranging from .437 to .694. However, when controlling for the effects of the other domains, only three domains (Status, Adventure, Teacher) showed statistically significant effects. Two of them (Adventure and Teacher) accounted for most of the variance in Satisfaction.

Similar findings were found when studying the relationship between Dissatisfaction and the independent variables. QSL was also a much better predictor of student Dissatisfaction with schooling than were the objective variables. Again, the same two domains of QSL (Adventure and Teacher) accounted for most of the variance in Dissatisfaction.

In this study, the approach was taken that both achievement and Well-being are outcomes of schooling. When the effects of QSL and its domains on these outcomes were studied, it was found that the domains which influenced achievement were not the same domains that influenced Well-being. Mathematics and Reading Comprehension were responsive to Status and Opportunity, while Satisfaction and Dissatisfaction were responsive to Teacher and Adventure.

### Effects of Background Variables on Outcomes

When the relationships of the background variables to Well-Being were analyzed, the only statistically significant relationship with Satisfaction was Sex, with females expressing more Satisfaction than males. For Dissatisfaction, only Age was significant, with older students expressing more Dissatisfaction. Location and Parents' Education were not found to be related to either dimension of Well-being.

However, with respect to achievement, most of the background variables were related. For Mathematics Achievement relationships were statistically significant with all four background variables - Age, Sex, Location and Parents' Education. For Reading Comprehension all but Sex were statistically significant. Males outperformed females in Mathematics. Urban students had higher achievement than rural students in Mathematics and Reading Comprehension. For both subjects, the correlation with Age was negative, indicating that older students were lower achievers. Achievement was positively related to Parents' Education.

### **Conclusions**

On the basis of the present study it was concluded that students' perceptions of the Quality of School Life have a powerful influence on Well-being, both on Satisfaction and Dissatisfaction. Of the domains of the Quality of School Life

studied, the Teacher and Adventure domains were the most important determinants of both dimensions of Well-being.

It was also concluded that at the high school level students' perceptions of the Quality of School Life contribute to their achievement. Of the four domains of QSL, two of them (Status and Opportunity) contribute to achievement, while the other two domains (Adventure and Teacher) were not found to contribute to achievement.

It was concluded that the background variables did not contribute significantly to the Quality of School Life. Students from different locations, male and female, of different ages, and different social backgrounds, rated the Quality of School Life in approximately the same way.

Since age was negatively correlated with achievement it was concluded that the older students express more Dissatisfaction with school. Because males outperformed females, it was concluded that by the time students reach Grade 10 the males are performing higher in Mathematics than the females. Whitt (1989) found the opposite to be true in the Junior High while Bulcock and Beebe (1988) found no significant difference in the elementary grades.

Urban students in the study outperformed the rural students by almost two grade levels in Mathematics and one grade level in Reading Comprehension. However there was no significant difference between the two groups in the way they



rated Well-being, Satisfaction and Dissatisfaction with schooling.

On the basis of this study it was concluded that the level of the Parents' Education influences the achievement of the students. It also found that parents from the urban areas in this study were better educated than those from the rural areas.

### **Implications**

Because students' perceptions of the Quality of School Life are so powerfully related to their perceptions of Well-being, then efforts to increase students' Well-being, that is, to increase their Satisfaction and to reduce their Dissatisfaction, might usefully be devoted to improving the Quality of School Life as perceived by students. Because of their strong relationships with the dimensions of Well-being, the Adventure and Teacher domains seem especially promising. From the items in these domains, efforts could be made to make school work interesting, challenging, and liked by students. Also, it seems important for teachers to treat students fairly, to listen to them, and to help them do their best.

Since achievement in Mathematics and Reading Comprehension is influenced by the domain Status, care must be taken to help students gain confidence and feel that they know something that is worth listening to. Students need to

be reassured of their abilities by teachers and others. Possibly, if students were given a chance to contribute during class discussions and to help their peers through peer teaching, their level of confidence and self-worth might increase.

Because achievement is influenced by the students' perception of the Opportunity domain, efforts should be made to provide opportunities for students to cope with the work, enjoy their work and experience success. Possibly a broader curriculum will provide the opportunity for students to select courses in which they can experience more success and enjoy their work. A curriculum designed to relate the school work to job opportunities may help students realize that the curriculum is useful and provides for future employment opportunities.

Well-being is influenced by the students' perceptions of the Adventure domain which measures the students' interest in their work and how intrinsically rewarding schooling is. In communities where there are a very limited number of educational experiences outside of the school, the school should make more effort to compensate for this through an enriched school program. Such a program could include distance education programs, field trips to urban centers (for exposure to different employment opportunities), role playing (such as mock parliament), club activities scheduled during class time (such as investment clubs, science clubs and

editorial clubs), a broader curriculum and use of up to date technology such as computers. Through such activities, the schools may provide a variety of experiences which are often lacking in the community, and at the same time make school more interesting for the students.

Since females are not performing as well as males in Mathematics, teachers should make an effort to provide extra encouragement to female students.

Because the rural students are performing at a lower grade level than the urban students it may be argued that affirmative action is required to help the rural students. Possibly innovative programs which relate curriculum more to the local environment will increase the quality of schooling in rural schools. In this study the parents in the rural areas were not as well educated as those in the urban areas. Because achievement is influenced by Parents' Education it may be that providing opportunities for rural parents to increase their level of education will also positively influence their children's achievement. Possibly rural schools should also seek affirmative action (for example, provide an enriched reading program in the early grades) in an attempt to compensate for the lower level of Parents' Education.

### **Recommendations for Further Research**

There are several areas emerging from this study which would benefit from further research.

1. There is a need for a longitudinal study which will enable researchers to assess the impact of prior achievement on present outcomes. This would permit an assessment of the influence of QSL on the outcomes of schooling when controlling for prior achievement.

2. A number of studies could be conducted to determine if other subject areas respond to QSL in the same manner as those tested in this study. It is only then that more general conclusion can be made about the impact of QSL on achievement.

3. Similar studies could be conducted in other provinces to determine if the responsiveness of the outcomes of schooling to QSL is similar there to the findings of the present study.

4. There is a need for a study of the relationship between QSL and objective school variables such as teacher qualifications and teacher experience.

5. There is a need for other studies to improve the affective scales (Satisfaction and Dissatisfaction) for better discriminant validity.

6. A study could be conducted to determine the effect of the background variables (SES, Sex, Age and Location) on each of the domains of the Quality of School Life.

7. A study could be conducted to determine the urban-rural differences in student perception of each of the domains of the Quality of School Life.

8. A study could be conducted to determine the sex differences in the responsiveness of Achievement and Well-being to each of the domains of the Quality of School Life.

9. A study could be done to examine the relationships between the type of school system (public vs. private) and student ratings of the Quality of School Life.

10. There is a need to conduct a study to try to identify other domains of the Quality of School Life.

11. There is a need to conduct a study to determine if affirmative action (for example, provide an enriched reading program in the early grades) will have a significant positive effect on students who have parents with a low level of education.

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**APPENDIX A**  
Student Questionnaire

ID# \_\_\_\_\_

INSTITUTE FOR EDUCATIONAL RESEARCH AND DEVELOPMENT  
MEMORIAL UNIVERSITY OF NEWFOUNDLAND

### School Life

We want to know how you feel about your school. Each sentence on the next four pages begins with School is a place where particular things happen to you or where you feel in a particular way. We want you to say whether you definitely agree, mostly agree, mostly disagree, or definitely disagree with each of the sentences.

Please read each sentence carefully and circle the number of the answer which best describes how you feel. Don't forget to put School is a place where ... at the beginning of each sentence so that it makes sense; for example:

School is a place where I really like to go.

Try these examples:

definitely agree	mostly agree	mostly disagree	definitely disagree
---------------------	-----------------	--------------------	------------------------

### School is a place where ...

- |                     |   |   |   |   |
|---------------------|---|---|---|---|
| 1. I like to be.    | 1 | 2 | 3 | 4 |
| 2. I feel restless. | 1 | 2 | 3 | 4 |

Thank you very much. Your answers will be kept strictly confidential.



	definitely agree	mostly agree	mostly disagree	definitely disagree
<b>School is a place where ...</b>				
3. I know that people think a lot of me.	1	2	3	4
4. I can do well enough to become successful.	1	2	3	4
5. I like to learn new things.	1	2	3	4
6. I sometimes feel inferior to my friends.	1	2	3	4
7. teachers treat me fairly in class.	1	2	3	4
8. I get enjoyment.	1	2	3	4
9. I feel lonely.	1	2	3	4
10. people think that I can do a lot of things.	1	2	3	4
11. I am happy with how well I do.	1	2	3	4
12. I find the work interesting.	1	2	3	4
13. I dislike being ridiculed by my friends for the way I dress.	1	2	3	4
14. teachers are usually fair.	1	2	3	4
15. I feel great.	1	2	3	4
16. I get upset.	1	2	3	4
17. people come to me for help.	1	2	3	4
18. I know the sorts of things I can do well.	1	2	3	4
19. I can get so interested in something I don't want to stop.	1	2	3	4

	definitely agree	mostly agree	mostly disagree	definitely disagree
<b>School is a place where ...</b>				
20. I have lengthy conversations with my friends of the opposite sex.	1	2	3	4
21. teachers listen to what I say.	1	2	3	4
22. I really like to go.	1	2	3	4
23. there is nothing exciting to do.	1	2	3	4
24. I feel important.	1	2	3	4
25. I know how to cope with the work.	1	2	3	4
26. I like all my subjects.	1	2	3	4
27. it is important to me what my friends think of me.	1	2	3	4
28. teachers give me the marks I deserve.	1	2	3	4
29. learning is a lot of fun.	1	2	3	4
30. you are bossed around too much.	1	2	3	4
31. people credit me for what I can do.	1	2	3	4
32. I get satisfaction from the work I do.	1	2	3	4
33. I do more work than is actually required.	1	2	3	4
34. I am a different person than at home.	1	2	3	4
35. teachers help me to do my best.	1	2	3	4
36. I feel happy.	1	2	3	4

	definitely agree	mostly agree	mostly disagree	definitely disagree
<b>School is a place where ...</b>				
37. I get annoyed at what goes on.	1	2	3	4
38. teachers ask me to help out.	1	2	3	4
39. I feel good about my work.	1	2	3	4
40. work lacks the challenge necessary to make it interesting.	1	2	3	4
41. I strive never to let my friends down.	1	2	3	4
42. I like my teachers.	1	2	3	4
43. I feel proud to be a student.	1	2	3	4
44. I get depressed.	1	2	3	4
45. I am a member of a "leading crowd".	1	2	3	4
46. I doubt that much I do will be useful to me.	1	2	3	4
47. I can hardly wait for the last bell.	1	2	3	4
48. I would like to be someone different than myself.	1	2	3	4
49. I feel bored.	1	2	3	4
50. I can handle my school work.	1	2	3	4
51. I am more interested in good grades than in knowledge for its own sake.	1	2	3	4
52. what your friends think about you is more important than what you think about yourself.	1	2	3	4

	definitely agree	mostly agree	mostly disagree	definitely disagree
<b>School is a place where ...</b>				
53. teachers really talk with the students, not just at them.	1	2	3	4
54. if I had my way I would not attend.	1	2	3	4
55. one has to do well to get a good job.	1	2	3	4
56. I am genuinely interested in my work.	1	2	3	4
57. I spend most spare time doing my own thing.	1	2	3	4
58. there is one teacher I am friends with.	1	2	3	4
59. my friends and I get together on our own time to talk about things we have learned in class.	1	2	3	4
60. I usually agree to go along with my friends.	1	2	3	4
61. I value my individualism; that is, being different from others.	1	2	3	4

## PERSONAL INFORMATION

NAME: \_\_\_\_\_

BIRTHDATE: \_\_\_\_\_  
DAY MONTH YEAR

SEX: \_\_\_\_\_

GRADE: \_\_\_\_\_

SCHOOL: \_\_\_\_\_

HOME ADDRESS Street \_\_\_\_\_

Town \_\_\_\_\_

Postal Code \_\_\_\_\_

**APPENDIX B**  
Construct Items

The following items were used to construct each domain. Each item completes a sentence which begins with "School is a place where ..." and this phrase must be inserted at the beginning of each item. The number at the end of each sentence refers to the item number in the student questionnaire, and the number in front of each sentence is the number used during analysis in Chapter 4.

#### Status (7 items)

- ST01 - I know that people think a lot of me. (3)
- ST02 - people think I can do a lot of things. (10)
- ST03 - people come to me for help. (17)
- ST04 - I feel important. (24)
- ST05 - people credit me for what I can do. (31)
- ST06 - teachers ask me to help out. (38)
- ST07 - I am a member of a "leading crowd". (45)

#### Identity (11 items)

- ID01 - I sometimes feel inferior to my friends. (6)
- ID02 - I dislike being ridiculed by my friends for the way I dress. (13)
- ID03\*- I have lengthy conversations with my friends of the opposite sex. (20)
- ID04\*- I it is important to me what my friends think of me. (27)
- ID05\*- I am a different person than at home. (34)
- ID06\*- I strive never to let my friends down. (41)
- ID07 - I would like to be someone different than myself. (48)
- ID08 - what your friends think about you is more important than what you think about yourself. (52)
- ID09\*- I spend most spare time doing my own thing. (57)
- ID10\*- I usually agree to go along with my friends. (60)
- ID11\*- I value my individualism; that is being different from others. (61)

**Teacher (8 items)**

- TD01 - teachers treat me fairly in class. (7)
- TD02 - teachers are usually fair. (14)
- TD03 - teachers listen to what I say. (21)
- TD04 - teachers give me the marks I deserve. (28)
- TD05 - teachers help me to do my best. (35)
- TD06 - I like my teachers. (42)
- TD07 - teachers really talk with the students, not just at them. (53)
- TD-8\*- there is one teacher I am friends with. (58)

**Opportunity (9 items)**

- OP01- I can do well enough to become successful. (4)
- OP02- I am happy with how well I do. (11)
- OP03- I know the sorts of things I can do well. (18)
- OP04- I know how to cope with the work. (18)
- OP05- I get satisfaction from the work I do. (25)
- OP06- I feel good about my work. (32)
- OP07- I doubt that much I do will be useful to me. (46)
- OP08 - I can handle my school work. (50)
- OP09\*- one has to do well to get a job. (55)

**Adventure (10 items)**

- AD01 - I like to learn new things. (5)
- AD02 - I find the work interesting. (12)
- AD03 - I can get so interested in something I don't want to stop. (19)
- AD04 - I like all my subjects. (26)
- AD05\*- I do more work than is actually required. (33)
- AD06\*- work lacks the challenge necessary to make it interesting.(40)
- AD07 - I can hardly wait for the last bell. (47)
- AD08\*- I am more interested in good grades than in the knowledge for its own sake. (51)
- AD09 - I am genuinely interested in my work. (56)
- AD10 - my friends and I get together on our own time to talk about things we have learned in class. (59)



Satisfaction (7 items)

- SA01 - I like to be. (1)
- SA02 - I get enjoyment. (8)
- SA03 - I feel great. (15)
- SA04 - I really like to go. (22)
- SA05 - learning is a lot of fun. (29)
- SA06 - I feel happy. (36)
- SA07 - I feel proud to be a student. (43)

Dissatisfaction (9 items)

- DS01\*- I feel lonely. (9)
- DS02\*- I get upset. (16)
- DS03 - I feel restless. (2)
- DS04 - there is nothing exciting to do. (23)
- DS05\*- you feel bossed around too much. (30)
- DS06 - I get annoyed at what goes on. (37)
- DS07 - I get depressed. (44)
- DS08 - I feel bored. (49)
- DS09 - if I had my way I would not attend. (59)

\* This item was dropped from the construct.

**APPENDIX C**

## Parent Questionnaire

98./99. How much education have the father and mother had?  
[Check one in each column.]

	father	mother
Elementary school only.	___	___
Junior high school only (Grades 7-9).	___	___
Some high school only (Grades 7-10).	___	___
Finished high school.	___	___
Vocational - Trades school.	___	___
Some university.	___	___
Finished university.	___	___
Other training (not degree or diploma, e.g., company sponsored course, military training, police training, etc.	___	___
Advanced education, post graduate degree (e.g., Master's, Ph.D., M.D., L.L.B., C.A., etc.)	___	___

Questions 100 and 113 were selected as proxy for the  
economic status of the family.

	boys	girls
100. How many children are there in the family?	___	___
113. At the present time what is the employment status of the father and mother?		
	father	mother
Housewife/househusband.	___	___
Unemployed (looking for work).	___	___
Unemployed (not looking for work).	___	___
Self-employed.	___	___
Employed (part-time).	___	___
Employed (full-time).	___	___

**APPENDIX D**  
**Scattergrams**

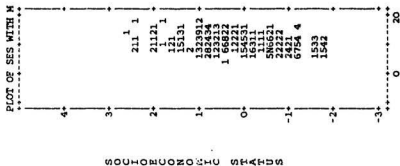
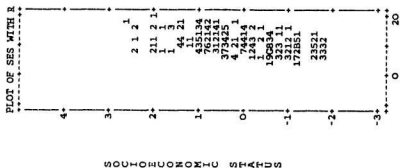


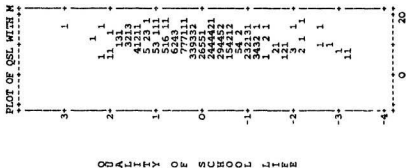
MATH1 GRADE EQUIVA

293 cases plotted.

READING1 GRADE EQU

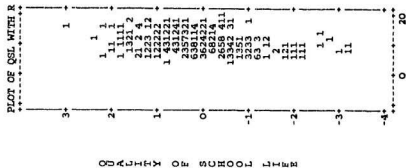
290 cases plotted.





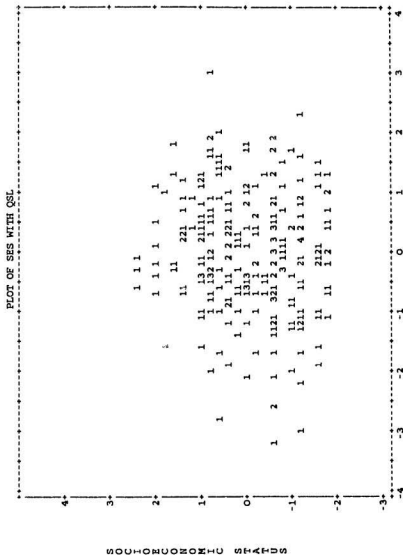
MATH1 GRADE EQUIVA

270 cases plotted.

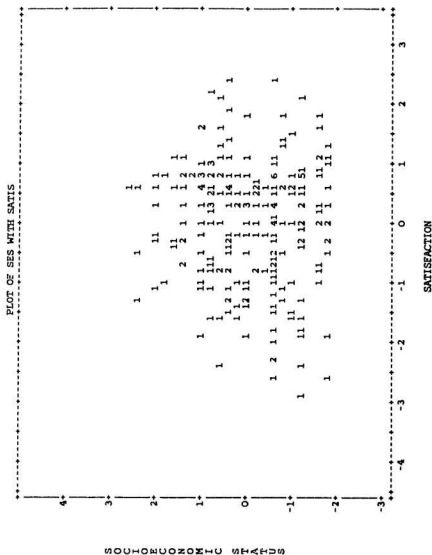


READING1 GRADE EQU

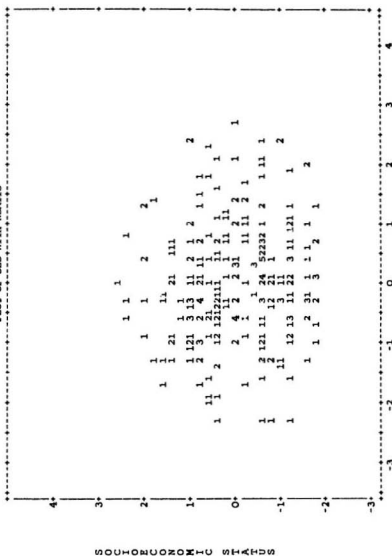
268 cases plotted.





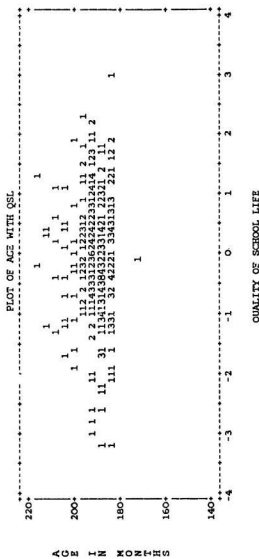


PLOT OF SES WITH NEGATIS

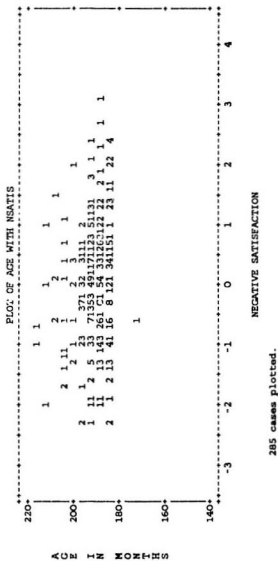


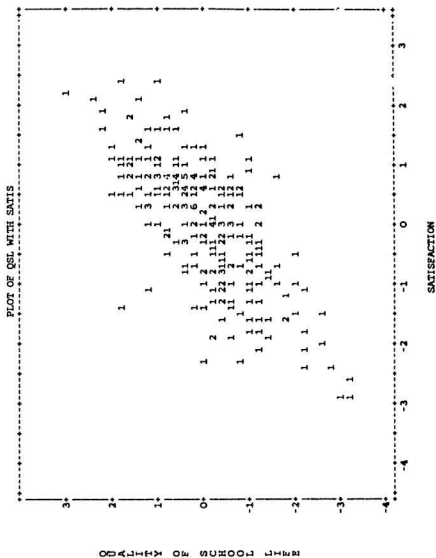
NEGATIVE SATISFACTION

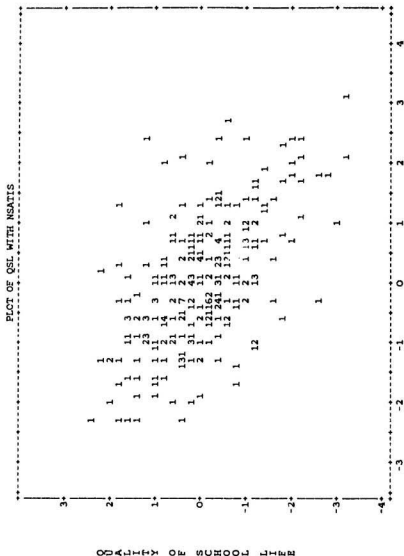
259 cases plotted.











279 cases plotted.

**APPENDIX E**  
**Correspondence**



# MEMORIAL UNIVERSITY OF NEWFOUNDLAND

St. John's, Newfoundland, Canada A1B 3X8

Institute for Educational Research & Development

Tel.: (709) 737-8685/86

February 4, 1986

Mr. Michael Gushue  
Regional Director  
Secretary of State  
Box 75, 8th Floor  
Atlantic Place  
215 Water Street  
ST. JOHN'S, Newfoundland  
A1C 6C9

Dear Mr. Gushue,

Your support of the Quality of School Life (QSL) Project is much appreciated. The project started today. The Research Assistant on the project is:

Mrs. Marguerite Baker  
Room E4047  
Institute for Educational  
Research & Development  
Memorial University of Newfoundland  
ST. JOHN'S, Newfoundland A1B 3X8

As you know the QSL group is composed of five Faculty of Education Professors; J.W. Bulcock, J.R. Covert, W.J. Gushue, R. Magsino and A. Singh. We plan to extend the QSL project next year by examining the linkages between school leaving and the labour market (between school and work). Thus, we intend to design a program of research dealing with the transition to adulthood in Newfoundland society.

Two models will be formulated. The first examines the educational and occupational plans of students still in school. Three questions govern much of the inquiry to be conducted within the model #1 framework.

- (i) What influences the learning of the basic skills and how much? (e.g. The community, school, socio-economic, sex, and ethnic factors.)

-2-

- (ii) Does success or failure in the early grades affect the learning of the basic skills in high school? (e.g. the impact of learning difficulties, cognitive development, strategies of information processing)
- (iii) How are the occupational preferences, career plans of high school students formed? (e.g. who leaves/stays on in school; who goes to tech/university and why; what jobs do the high school students aspire to hold; what bearing does schooling have on these decisions?)

The second model will focus on actual occupational attainments or lack thereof. The four stages in the occupational attainment process to be investigated will be (i) the decision to leave school early, (ii) the transition from school to work, (iii) the early career of school leavers, and (iv) the future aspirations of school leavers. Thus, factors affecting occupational achievement, unemployment, employment stability, underemployment, job search, geographical mobility, job market perceptions, the quality of post-school life and career commitment will be identified and their relative impact on career success assessed.

Projects of this kind are major undertakings; hence, some indication is desirable, in advance, as to whether they can be funded by the Government of Canada. If you believe that the Secretary of State's office has a mandate for this kind of research perhaps you would let us know. In any event the QSL group would be interested in your observations on the proposed project and/or your suggestions regarding the funding of such research.

Your continued cooperation is much appreciated.

Yours sincerely,

J.W. BULCOCK  
Professor

JWB/amm

c.c. Neil Penney, Office of the Secretary of State  
Drs. Covert, Gushue, Magsino, Singh  
Mrs. Marguerite Baker, Research Assistant







